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ABSTRACT

A study was conducted to determine whether the school and work related attitudes of students enrolled in model programs for training disadvantaged differed significantly from those of their counterparts who had no chance to take part in vocational education programs. Another goal of the study was to compare the affective characteristics of disadvantaged students from exemplary vocational programs with those of nondisadvantaged students in regular vocational education programs. Students came from schools in four geographical regions in rural Mississippi. Twenty attitudinal variables including 15 work values assessed by Super's Work Values Inventory, the Attitude Scale of Crites' Career Maturity Inventory, four attitude scores from Kilbane's Survey of Pupil Opinion, including perceptions of self-as-student, perceptions of teachers, social perceptions, and overall school attitudes were measured for the 278 subjects in the three groups. In addition, the overall attitudes of the disadvantaged group toward vocational education and instructors' rating of their progress in vocational classes were collected. Nine research questions probing inter-group relationships and within-group relationships for attitudes held by students in the quality programs were utilized to structure the study. Data were analyzed by use of a variety of univariate and multivariate statistical models. Special needs programs in Mississippi were found to be associated with development of more positive attitudes in disadvantaged students. Disadvantaged students in quality programs expressed more positive attitudes toward their vocational studies than were observed for regular vocational students. They also exhibited a profile of attitudes more like those of regular vocational students and less like those of disadvantaged youth in nonvocational studies. (LAS)

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INFLUENCE OF MODEL VOCATIONAL PROGRAMS ON THE ATTITUDES OF RURAL DISADVANTAGED ADOLESCENTS

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TABLE OF CONTENTS

PAGE

I. INTRODUCTION 1

The Problem. 3

Hypotheses 4

Theoretical Assumptions. 7

Limitations of Study 12

II. RELEVANT LITERATURE. 15

The Rural Disadvantaged. 15

Development of Vocational Maturity 17

III. RESEARCH PROCEDURES. 21

An Overview. 21

Selection and Characteristics of Subjects. 22

Disadvantaged Vocational Students 22

Disadvantaged Nonvocational Students. 25

Nondisadvantaged Vocational Students. 25

Selection of Instruments 27

Preliminary Studies of Instrumentation. 27

Career Maturity Inventory Attitude Scale. 27

Work Value Inventory. 29

Survey of Pupil Opinion 30

Attitudes Toward Vocational Program 35

Instructor Rating of Student Progress Scale 38

Collection of Data 40

Analysis of Data 40

PAGE

IV. ANALYSIS OF DATA 43

Acceptance of Vocational Programs. 43

Comparison of Career Readiness Attitudes Among Groups. 47

Attitudes Toward Self and School. 47

Career Maturity 51

Work Values 51

Summary of Univariate Data. 66

Multivariate Studies of Group Differences 68

Total Model Predictions of Group Differences. . . . 71

Super's Work Values as Discriminators 75

Self and School Attitudes as Discriminators 78

Predicting Group Memberships with Different Discriminant Models. 80

Comparative Evaluation of Three Models. 84

Relationship of Race, Age and Sex to Discriminant Function 86

Prediction of Student Progress 94

Inner-Relationships Among Attitudinal Measures 94

Career Maturity Attitudes as Criterion. 96

Attitude Toward Vocational Education as Criteria. . 98

Self and School Attitudes as Criteria 100

Summary of Inner-Relationships. 105

Characteristic Profile of Disadvantaged Vocational Students. 105

Identification of Component Factors 106

PAGE

V. SUMMARY, IMPLICATIONS, RECOMMENDATIONS 113

Summary of Findings. 114

Implications of Study. 117

Successful Intervention in Attitudinal Development 117

Correlates of Career Maturity Attitudes 120

Correlates of Self Perceptions in School Setting 121

Recommendations. 122

Program Development 122

Further Study 123

REFERENCES 125

APPENDICES 131

LIST OF TABLES

TABLE PAGE

1 Sex and Race Composition of Comparison Groups. 26

2 Composition of Factors for Survey of Pupil Opinion as Assessed in Mississippi and Ohio Samples 32

3 Comparison of Means for Average and Below Average Groups on Survey of Pupil Opinion 36

4 Correlation of Self in School Attitudes with Overall Self Concept, Scholastic Achievement and School Attendance for High School Vocational Students. . . 37

5 Percentage of Disadvantaged Vocational Students Responding in Different Satisfaction Levels on Attitudes Toward Vocational Program Scale 44

6 Comparison of Means for Disadvantaged Vocational and Norm Groups of Regular Vocational Students on Items of the STVP Scale 46

7 Comparison of Attitudes toward Self and School for Disadvantaged Non-Vocational (DNV), Disadvantaged Vocational (DV) and Nondisadvantaged Vocational Students (NDV) 49

8 Results from Scheffe's Test for Comparing Group Means on Factors Derived from the Survey of Pupil Opinion 52

9 Career Maturity Measures for Disadvantaged Vocational, Nondisadvantaged Vocational and Disadvantaged Nonvocational Groups. 52

10 Work Values for Disadvantaged Vocational, Disadvantaged Nonvocational and Nondisadvantaged Vocational Students 54

11 Results of Scheffe's Test for Comparing Means for Work Values of Three Groups on the Work Value Inventory 55

12 T Ratios Comparing Means for Work Values Among Disadvantaged Vocational Students. 64

13 T Ratios Comparing Means for Work Values Among Disadvantaged Nonvocational Students 65

TABLE PAGE

14 T Ratios Comparing Means for Work Values Among Nondisadvantaged Vocational Students 67

15 Simple Correlation of Selected Personal Variables for Combined Groups 69

16 Summary of Order of Entry for Twenty Attitudinal Measures on Discriminating Variables Among Three Groups of Subjects. 72

17 F Ratios Comparing Differences in Three Groups at Each Step of Stepwise Discriminant Analysis 74

18 Summary Table Indicating Order of Entry of Separate Work Values in Stepwise Discriminant Analysis . . . 76

19 F Ratios Contrasting Separate Pairs of Groups in Each Step of Discriminant Model When Super's Work Values Were Employed as Predictor Variables. . 77

20 Summary Table Indicating Variables from the Survey of Pupil Opinion Which Discriminated Significantly Among Groups. 79

21 Comparing Groups on Set of Discriminant Attitudes Measured by the Survey of Pupil Opinion 79

22 Classification of Subjects into A Priori Groups Utilizing Three Separate Discriminant Analysis Models. 82

23 Summary of Differentiating Functions of Variables in Stepwise Discriminant Analysis When Sex, Age, and Race of Subjects Were Considered 87

24 Male and Female Group Means for Disadvantaged Vocational, Disadvantaged Nonvocational and Nondisadvantaged Vocational Groups on Work Values. . . 89

25 Male and Female Group Means for Attitudinal Measures Related to Career Maturity, School and Self 90

26 Means for Black and White Subgroups on Attitudinal Measures Related to Work Values 91

27 Means for Black and White Subgroups on Attitudinal Measures Related to Career Maturity, Self and School. 92

TABLE PAGE

28 Summary of Variables Significantly Predicting Instructor's Ratings for Disadvantaged Students' Potential in Future Work. 95

29 Summary of Variables Significantly Predicting Attitudes Associated with Career Maturity for Disadvantaged Vocational Students 97

30 Summary of Variables Significantly Predicting Attitudes of Disadvantaged Vocational Students Toward Vocational Education Programs. 99

31 Canonical Roots Derived in Predicting Attitudes Toward Self and School Measured by SURPO. 101

32 Correlation of Predictor Variables with Canonical Roots Composed of Attitudes Toward Self and School. 103

33 Correlation of SURPO Subscales with Canonical Roots Related to Predictor Set. 104

34 Factors Derived from Combined Attitude Scores Measured by the SURPO,CMI,WVI,TRSP,ATVP Instruments for Disadvantaged Vocational Students . 107

PREFACE

The development of more vocationally mature attitudes in educationally disadvantaged adolescents who participated in model vocational programs was identified in this study. Rural students who participated in well implemented vocational education programs designed to meet their special educational needs were found to have more positive concepts of themselves as students and to express more favorable attitudes toward teachers and toward social interactions in school than did their disadvantaged counterparts enrolled in nonvocational curricula. The disadvantaged vocational group also had more intrinsically motivated work values and indicated more growth in attitudes toward career maturity than did subjects from the disadvantaged nonvocational comparison group. Furthermore, the disadvantaged vocational students expressed more positive attitudes toward vocational education than did nondisadvantaged students from regular vocational programs.

This investigation, by necessity of time limits, was quasi-experimental in nature since the subjects could not be randomly assigned to participate in either of the three study programs. At the initiation of the research, subjects in all three groups were already committed to their high school program of studies. Though every effort was made to find an equivalent sample of disadvantaged students not enrolled in vocational programs and to locate a typical sample of vocational students from nondisadvantaged backgrounds to compare with the disadvantaged vocational subjects, the results of the study should be considered descriptive, rather than causal in nature. Nevertheless, the consistent patterns of differences in attitudes found among the three groups do appear to support the hypothesis that disadvantaged youth from model vocational programs are more like nondisadvantaged youth in growth toward vocational maturity than are their disadvantaged counterparts with no vocational training.

Data in this study appear to warrant further investigation where the influence of special vocational needs programs for disadvantaged can be studied longitudinally. Is there a relationship between more attitude development and growth in cognitive understandings and performance skills in these students? What positive carry-over of these prevocational attitudes are observed by employers when students from the model vocational programs enter the world of work?

Grateful acknowledgments for the assistance of personnel in the Vocational Education Division of the Mississippi State Department of Education and the Research and Curriculum Unit for Vocational and Technical Education of Mississippi State University in planning and implementing the study must be made. Particularly, the counsel and support of Harold McMinn and W.T. Taylor, State Director for Vocational Programs for the Disadvantaged, was very helpful. James F. Shill and Edward L. Thomas were also very helpful as resource persons and in general support. Appreciation is also expressed to Marion T. Kilbane and the Cleveland (Ohio) Public School System for use of the Survey of Pupil Opinion, an instrument utilized in the study.

I. INTRODUCTION

How successful are existing exemplary vocational programs in fostering attitudes associated with the development of vocational maturity among rural disadvantaged youth in Mississippi?

Since 1968 over 300 programs have been designated by the Mississippi State Division of Vocational Education to train severely educationally deprived youth in semiskilled areas so that they can secure and responsibly maintain a job after completion of their high school studies. Funding for the vocational programs for disadvantaged students in Mississippi has largely been provided by the Federal Government under provision of the Vocational Education Amendments of 1968. In that legislation directions were given to state vocational education program planners to devote not less than 15 percent of the allocated funds to educate persons not physically handicapped or mentally retarded, who have academic, socioeconomic, or other handicaps that prevent them from succeeding in regular vocational education programs (Federal Register, 1970).

This study was developed primarily to determine whether the school and work related attitudes of such students enrolled in model programs for training disadvantaged differed significantly from those of their counterparts who had no opportunity to participate in vocational education programs. Another goal of the study was to compare the affective characteristics of disadvantaged students from the exemplary vocational programs with those of nondisadvantaged students in regular programs in vocational education.

Since curricula for disadvantaged were widely divergent in development and implementation in Mississippi, it was decided to study the affective responses of students from model programs only. Programs from which subjects were taken were termed "model" since they were recognized as having developed a quality curriculum model by the state supervisor for disadvantaged programs. Four separate programs for training the disadvantaged located in different geographical rural regions of the State of Mississippi were recommended as having made noteworthy progress in meeting the educational needs of their student constituents. Students who were studying in these programs comprised the sample of disadvantaged vocational subjects.

To characterize the rural disadvantaged students more effectively, two comparison groups of subjects having similar age ranges (15-19) were also studied. The first consisted of a group of disadvantaged students who were not enrolled in vocational education programs and were considered by their counselors to be educationally unable to complete regular studies in that area without supportive help. The second comparison group was composed of nondisadvantaged students taking regular vocational education classes in two of the same vocational centers recognized for having exemplary programs of vocational education for disadvantaged.

Though data from this study must be considered descriptive, it was conceptualized that, if the supportive, developmental oriented curricula in the exemplary programs were successful in accomplishing their goals, the disadvantaged vocational students should express similar attitudes associated with career maturity to those expressed by the regular vocational students. Concurrently, their attitudes in these same areas would diverge more broadly from those of their disadvantaged counterparts who had not had the advantage of the supportive services provided by the quality programs in vocational education.

The Problem

The major purpose of this investigation was to study the self in school perceptions, school related attitudes, career maturity attitudes, and work values of disadvantaged high school students enrolled in model vocational education programs in Mississippi as compared to similar traits for disadvantaged students not enrolled in vocational programs and nondisadvantaged vocational students.

Specifically, the objectives of this study were stated as follows:

1. To determine how well vocational education programs were accepted by disadvantaged students in the model programs.
2. To compare responses for groups of high school age students termed disadvantaged vocational, disadvantaged nonvocational and nondisadvantaged vocational on the following affective measures:
   A. Self concept as a student.
   B. Attitudes toward school.
   C. Work values serving as motivators for future work.
   D. Attitudes associated with career maturity.
3. To assess the relationship of the selected personal characteristics and attitudes to the disadvantaged students' progress in vocational education programs as determined by instructor

ratings.

4. To discover what inner-relationships existed among the following variables as respective predictors of career maturity attitudes, attitudes toward vocational programs and attitudes toward self and school when the respective dependent variable was held constant:

    A. Age

    B. Sex

    C. Tenure of study in program

    D. Work values

    E. Self in school

    F. School related attitudes

    G. Career maturity attitudes

    H. Attitudes toward vocational programs

    I. Instructor evaluation of students' potential

5. To describe the characteristic profile of disadvantaged vocational education students in terms of attitudes associated with positive career development.

Hypotheses

The following research questions were studied. They are grouped according to the specific objectives formulated for the study.

Acceptance of Vocational Education Programs

1. How many of the disadvantaged vocational students:

    a. liked their vocational classes better than their other school work?

    b. thought that they were learning some skills and information that would help them to get a job in the future?

   c. planned to finish their course of study and graduate from high school?

   d. would recommend that one of their friends take the same vocational training program in which they were enrolled?

   e. were pleased that they enrolled in their present vocational program of study instead of taking regular school work?

2. How did the overall attitude of the disadvantaged vocational group toward vocational classes as measured by the *Attitudes Toward Vocational Inventory* compare with that of a norm group of nondisadvantaged vocational students?

Comparison of DV Students' Characteristics With Other Groups

3. What differences, if any, exist among means for the disadvantaged vocational, disadvantaged nonvocational and nondisadvantaged vocational groups of students on each of the following measures considered univariate variables:

   a. attitudes toward school and self, teacher relationships and school-social participation and total school experience as measured by the *Survey of Pupil Opinion* (SURPO)?

   b. fifteen work values assessed by *Work Value Inventory* (WVI)?

   c. career maturity attitudes as inventoried by the *Career Maturity Inventory* (CMI/A)?

4. Which of the 20 subscales measured by the SURPO, WVI and CMI/A are significant predictors of group differences in the attitudes of the disadvantaged vocational, disadvantaged nonvocational and

nondisadvantaged vocational groups of students in a multivariate study of group differences?

5. What is the most effective set of predictors which differentiate among the three major groups of subjects when subscales of each of the following instrument are used as separate predictor sets:
   a. Work Value Inventory
   b. Survey of Pupil Opinion

6. How influential are the variables of race and sex in interacting with attitudinal measures in discriminating among the three groups?

Personal Characteristics Related to Student Progress

7. What combination of the variables of age, sex, tenure in program, attitudes toward vocational education, attitudes toward self in school,teacher perceptions, social perceptions, work values and career maturity attitudes were significantly related to the instructors' ratings of the disadvantaged students' progress in model vocational programs?

Inner-Relationships Among Attitudinal Measures

8. How significant were the variables of age, sex, tenure of study in program, work values, attitudes measured by the Survey of Pupil Opinion, career maturity attitudes, attitudes toward vocational programs and instructors' evaluations of student progress as predictors of the following characteristics for disadvantaged vocational students when the respective dependent

variable was held constant:

a. career maturity attitudes (CMI/A)?

b. self in school attitudes (SURPO) ?

c. attitudes toward vocational education programs (ATVI)?

9. When the 22 attitudinal measures assessed by the WVI, SURPO, ATVI, CMI/A and IRSP instruments are considered factorially as a composite variable, what characteristic profile of personal traits emerges to describe the overall attitudes of disadvantaged vocational students?

Theoretical Assumptions

Three theoretical assumptions upon which the rationale of this study was based warrant discussion. They are as follows:

1. In disadvantaged adolescents attitudes associated with career maturity interact with work values and attitudes toward self, vocational education and school, in general.
2. Students' functional self, as perceived in the social interactions of the school setting, has more relevance in vocational contexts than other dimensions of self that might be considered.
3. Affective behaviors of rural disadvantaged students of high school age can be positively modified by intervention with well planned programs in vocational education.

This study was structured on the basic premise that attitudes which students hold toward themselves, their school work, vocational training and the work values are correlated with their growth toward vocational maturity. Westbrook (1970) supported this assumption in the first phase of his paradymn for describing the vocational adjustment process. He proposed that a readiness for job training was required before students could profitably enter job training. This readiness included the practicing of effective work habits and the possession of positive attitudes toward the world of work by prevocational students.

In support of this need for vocational readiness, Perryman (1972) also conceptualized the acquisition of values, abilities (which included attitudes and behaviors as well as skills and knowledge) and motivation to contribute to the growth of individuals and their life style as significant assets in the development of career maturity. He defined career education as the aggregation of processes by which an individual acquires and develops these affective measures.

In his testimony to the United States Senate Select Committee on Equal Educational Opportunity, Edington (1971) reported that the educational and occupational aspirations of rural students appear to be negatively affected by their low economic status. He further characterized the rural disadvantaged youth as possessing attitudes which blocked their progress in career development such as low self-esteem, feelings of helplessness in the face of seemingly unconquerable handicaps and the impoverished confidence in the value of education as an answer to their problems.

The lack of motivation for educational processes involved in seeking delayed goals is characteristic of individuals who rank low on the intrinsic dimensions of the motivation scale. Crow, et al., (1966) also emphasized the overlying influence of extrinsic motivators in the education of disadvantaged children. Weisman (1973) developed a rationale for relating the socioeconomic status of workers to their motivational needs and values in reference to Maslow's extrinsic-instrinsic dimension of behavior (Maslow, 1970). The intrinsic vs. extrinsic taxonomy of Maslow's theory of needs, as interpreted in terms of work values by Weisman, appears to lend support to models paralleling the development of school interests. By Weisman's construct, for example, more disadvantaged subjects are more extrinsically motivated by materialistic factors, such as the safety needs of job security and group affiliation. Less disadvantaged students, to the converse, are more influenced by internal values, such as those of self actualization.

In view of longitudinal studies with eighth grade males, Crites and Sembler (1967) gave a hierarchical paradymn for development of youth in which career maturity and educational accomplishments are coordinate dimensions, or parallel "tracks." The tasks of achieving educationally and maturing careerwise are dual aspects of the same development sequences for adolescents. Crites (1973) envisioned a general adjustment trait as an overall factor which cemented educational progress and career maturation of youth into a composite relationship. In summary, Crites' construct, supported by the work of Westbrook, Perryman, Edington, Crow, Weisman, and Maslow, provided the fundamental rationale for relating the variables of attitudes toward self, school, and vocational education, as well as work values, to measures of career maturity for disadvantaged adolescents.

Self Identification in Relationship to School

Within the context of this study, "self" for disadvantaged youth was viewed functionally as the subjects' self concept of themselves as students. Field (1962) interpreted "experiencing self as a process" in his development of a theory for explaining "concepts of self-in-vocational situations." His theory postulated that individuals act in ways which fit their current notions of what they are like, what they can be like, what they want to be like, what their situation is like, what their situation may become and the way they see these aspects of self and situation as being related. Dinkmeyer (1965) concurred with Field's viewpoint when he projected that self concept, really, is the individual's anticipation of his general acceptance or repulsion in a given situation.

The social interaction aspects of Field's theory were supported by Turner in his concept of the functional self. Turner (1973) viewed "self" as being acquired through the interaction with "significant others." Turner proposed that the individual may be thought of as existing in an environment which is communicated through social interaction. During this exposure the individual perceives events (self experiences), conceived in individual acts which mold and shape the phenomenon of self.

Building on Turner's concept first, assume that the individual participates in a well structured vocational program. He is in an environment where he interacts with other individuals with common goals under the supportive approval of a master teacher. He realizes success and develops a concept of what his self can be like in a productive environment. He begins to view himself as an effective student. He crystallizes values as to what he wants to be like. The perception of self in association with others and the work task (vocational preparation) in the school setting would appear to be a more effective predictor of career readiness for individuals than other aspects of self perception which might be considered. As observed by Turner (1973), persons who have developed a more mature behavioral repertoire, through learning to meet the characteristic demands of vocational development tasks, are able to seek personal, rather than public accomplishments and to use special talents to gain self satisfaction in meeting challenges. Like any other facet of self concept, the functional self, according to Turner (1973) must be viewed as a process of being and becoming. From this frame of reference, subjects' perceptions of self in their interactions with the school environment appear to be in congruence with the concepts of self proposed by Combs and Snygg (1959), Mead (1934) and Rogers (1959).

Successful Intervention by Vocational Education

The third assumption of this study was that vocational education programs can successfully intervene by modifying the low motivation-inferior self syndrome which dominates educationally disadvantaged youth. In view of the output of federal funds invested in developmental education during the past decade, this assumption appears axiomatic. As suggested by Oakleif (1971), however, empirically controlled research on vocational and technical education for the rural disadvantaged is noticeably lacking. Successful attempts to enhance rural students' attitudes toward self and school through vocational instructional programs have not been reported in the literature.

Almen (1971) has shown that an exemplary vocational program planned for disadvantaged youth in an urban setting did make a difference in the attitudes of its participants. He found that inner city students who studied in the model educational program improved significantly in attitudes associated with their general self esteem, in attitudes related to their school self esteem and in their development of vocational maturity.

Rural disadvantaged and urban disadvantaged students are similar in educational needs and attitudes (Oakleif, 1971); hence, it seemed reasonable to assume that similar results as those discovered by Almen for urban youth could be achieved in well structured programs in vocational education programs for the rural disadvantaged.

LIMITATIONS OF STUDY

The reported study was organized in an ex post facto design. Since subjects for the study were already enrolled in ongoing instructional programs, the investigators were not able to randomly assign individuals to comparison groups.

Also, since the research was structured to assess the characteristics of vocationally disadvantaged students who had studied under the best possible conditions, no attempt was made to select the subjects randomly from all students of similar traits enrolled in vocational programs in Mississippi. Hence, in no sense can data from this study be extrapolated to describe the characteristics of rural disadvantaged youth in Mississippi's vocational programs in general.

II. RELEVANT LITERATURE

This research focused primarily on the educational-vocational attitudes of disadvantaged adolescents participating in vocational programs in rural regions of Mississippi recognized as effective by vocational educators. Consequently, recent literature relative to the characteristics of rural disadvantaged youth, particularly as they related to vocational education, was examined. Career maturity models as developed during the past decade were also considered relative to educationally disadvantaged individuals 14 to 18 years old.

The Rural Disadvantaged

Handicaps and deprivations associated with youth from substandard socioeconomic backgrounds have been demonstrated to encompass broad, complexly related patterns of disadvantages, e.g., educational, cultural, intellectual and psychological, as well as social and economic. Edington (1970) and Oakleif (1971) in their reviews of the literature on rural disadvantaged reported no longitudinal studies on the development of affective behaviors in rural youth with these deprivations. Generally these investigators reviewed descriptive studies interpreting the status of the disadvantaged.

Edington (1970) concluded that educational and occupational aspirations appear to be negatively affected by low economic status. The rural disadvantaged were characterized by attitudes which are nonsupportive of educational progress, low esteem and "impoverished" confidence in the value and importance of education.

Edington also noted higher school dropout rates for the rural poor and lower than national achievement norms for them. He associated these behavioral responses with the lack of educational stimulation found in homes of the disadvantaged, the geographical isolation of many rural youth and inadequate school curricula.

Potts (1964) also described the home environment as totally inadequate for a full life. Breathitt (1967) pointed out that books are seldom available in the homes of the rural poor and that reading is not encouraged. Many times children from these environments develop serious difficulties in reading, secure only a limited vocabulary and develop poor diction and oral speech. With these handicaps, Breathitt concluded, the rural disadvantaged are not successful under traditional standards in vocational education programs. Larson and Slocum (1969) found that when compared to youth from more affluent backgrounds, rural low income youth were less likely to be interested in school, to receive high grades, to receive encouragement from teachers, or to report high levels of educational and occupational aspirations.

All researchers do not agree with the conclusions of Edington and Oakleif regarding the educational aspirations of disadvantaged youth. There is some precedence in the literature to support the conclusion that the vocational and educational perceptions and attitudes of disadvantaged and nondisadvantaged students are similar. Soares and Soares (1968), for example, found no major differences in the attitudes of the two groups. Campbell, et al. (1969) concluded that students of junior high school age from disadvantaged and nondisadvantaged backgrounds, respectively, were more alike than different in their educational attitudes and vocational considerations.

In regard to career aspirations, Cosby and Picou (1973) indicated that both lower class rural and urban blacks have relatively high occupational desires. In subsequent studies they also indicated a positive linkage between social class and career expectations.

Kuvlesky and associates conducted a series of studies which, according to Kuvlesky, "debunk common and misleading myths about the social ambitions of rural youth." (Kuvlesky, 1970, p. 41.) Kuvlesky, Wright and Juarez (1969) documented that the rural Negro in the South and Mexican American rural youth of the Southwest, by the majority, desired high prestige job attainments and college level education; i.e., they, in general, had middle class job values. In an across country sampling study, Lever and Kuvlesky (1969) noted that rural youth generally have very high job and educational aspirations and expectations, regardless of their social class.

Development of Vocational Maturity

The first concrete definition of vocational maturity was offered by Super (1955) when he explicated five developmental tasks in career establishment. His model offered the advantage of providing a rationale around which adolescents' growth could be measured in sequential steps. The task of crystalizing vocational preference is the one which individuals confront between the ages of 14 and 18. Specification of career preference occurs later between the ages of 18 through 21.

Following the implications of his own work and that of Ginzberg, et al., (1951), Super (1955, 1957), conceptualized growth to career maturity as a series of evolutionary periods of deliberations for persons which culminate in a compromise between personal needs and occupational realities. Super (1963) later characterized the task of crystallization of vocational purpose as that of the individual's formulating ideas that are self appropriate.

Some of the attitudes which Super associated with crystallization task in the adolescent's growth to vocational maturity were: awareness of the need to crystalize, awareness for the need to consider vocational choice, differentiation of interests and values, awareness of present-future relationships, and formulation and consistency of vocational preference.

In elaboration of Super's constructs related to development of vocational choice attitudes, Crites (1965) subdivided these behavioral tasks into dimensions called involvement, orientation, independence, preference, and conception. He translated these vocational maturity constructs into the attitude scale of his instrument, the Career Maturity Inventory.

In support of Super's theory several investigators have explored both school related and nonintellective behaviors which correlate with youth's career development. Bartlett (1968) observed positive correlations between career maturity and personal traits of self-confidence, achievement, autonomy and dominance. Hollender and Schalon (1965) reported that a positive relationship existed between career maturity and achievement, endurance, order and intraception. They also indicated a negative relationship with aggression traits as measured by the Adjective Check List. In his studies Crites (1961) found no real sex differences in vocational attitudes. Studies by Cover (1968) and Harris (1966) have confirmed the relationship of career maturity in students and their grade point averages. Nonsignificant relationships between career maturity and socioeconomic status have been found for blacks (Gilliland, 1966) and for Appalachian youth (Ashbury, 1967).

Hoyt (1962) and Pucel and Nelson (1972) examined the career maturity of students in schools offering vocational-technical education curricula. Their results indicated that students in vocational classes were less maturely oriented than their counterparts enrolled in nonvocational curricula. These studies did not consider the variable of socioeconomic differences in students, however. Other studies have shown that attitudes postulated by Crites (1973) to be associated with the development of career maturity, such as self concept and school self images, were positive outcomes of exemplary programs for disadvantaged (Almen, 1971; Eaddy, 1971; Huffman, 1971).

In consensus the literature related to the career maturity development of rural adolescents appeared to support the hypothesis that while attitudes associated with their career readiness are poorly developed, these educationally disadvantaged youth have the potential aspirations for growth toward self actualization in vocational endeavors. While empirical data are scarce for documenting the causal relationships in the role of educational programs, it seems evident that well planned programs in vocational and career education are factors involved in the positive development of mature attitudes in disadvantaged students. Very little evidence exists, however, for evaluating the attitudinal growth of rural disadvantaged students participating in quality programs of vocational education in the Deep South. Consequently, a study such as the present investigation appears to have pertinent implications for the development of future programs and for the testing of vocational theory.

III. RESEARCH PROCEDURES

An Overview

This study involved the assessment of career maturity, work values, attitudes toward self in school and attitudes toward vocational education programs for rural disadvantaged youth. To determine whether participation in quality vocational programs for training educationally disadvantaged was influential in fostering career maturity for these Mississippi youth,two comparison groups were selected. The first comparison group consisted of disadvantaged students with socioeconomic backgrounds and educational records similar to those of the disadvantaged vocational group. This comparison group, termed "disadvantaged nonvocational" differed, however, in that its subjects had not been enrolled in vocational studies. The second comparison group termed "nondisadvantaged vocational" included a representative sample of nondisadvantaged students enrolled in regular vocational programs at the high school level.

Selected attitudes were ascertained by instruments designed to evaluate affective behaviors indicative of positive growth toward career readiness. Instruments which were not commercially available were restandardized on a sample of Mississippi youth with average and less-than-average achievement records who were enrolled in vocational programs at the high school level. Simple questionnaires for measuring students' attitudes toward vocational education programs and for quantifying teacher evaluations of students' progress in vocational programs were structured and validated.

In seeking answers to research questions, the data were collected and analyzed by application of both univariate and multivariate statistical models.

Variables which discriminated this group from their counterparts who had no opportunity to study in vocational classes and from regular vocational students were also identified. The inner-relationships of all attitudinal measures were calculated to determine patterns of growth toward career readiness for the disadvantaged vocational group of rural adolescents. Finally, a profile of characteristic attitudinal traits was developed for the disadvantaged vocational students who studied in model programs.

The research design for the investigation was organized into four phases: (1) selection of participants; (2) development of instruments; (3) collection of data and (4) analysis of data.

Selection and Characteristics of Subjects

Disadvantaged Vocational Students

Model Vocational Programs. To allow disadvantaged students opportunity for maximum exposure to optimum vocational curricula and supportive services, it was decided to select subjects for the principal population, disadvantaged vocational students, from existing quality vocational education programs. The criteria for a vocational program's being selected for participation consisted to its' recognition by state level vocational educators as having developed and implemented ongoing curriculum objectives which exemplify those outlined by the National Committee on Employment of Youth (Cohen, 1969) and the guidelines for the Vocational Amendments of 1968 (Kay, Kemp & Saunders, 1973).

In consultation with W.T. Taylor, state supervisor for vocational programs for disadvantaged and handicapped from the State Department of Education, several programs in Mississippi were recognized as providing educational opportunities congruent with the ideals of 1968 Vocational Amendments Act. On the basis of geographical representation and rurality, programs for disadvantaged in four vocational centers were chosen to provide subjects for the study. These programs were termed "quality" or "model" since they appeared to be representative of the best training which Mississippi currently offered for rural disadvantaged students of high school age.

All of these programs were located in population areas of 45,000 or less as indicated by the 1970 Bureau of Census reports. The vocational centers containing the model programs served students from perimeter counties where communities most often contained 2,500 or less individuals. Industries in the areas were primarily agribusiness and small manufacturing units. The four vocational centers were geographically distributed in the north-central, south-central, south-western and lower Delta regions of Mississippi.

The four programs varied in tenure of establishment from two to seven years. Their curricula for disadvantaged, primarily, centered around vocational training classes designed to prepare semi-skilled workers in the areas of carpentry, masonry and home economics (commercial sewing). Students worked in vocationally related classes for one half day and returned to regular classes in high school for the other half day to pursue studies in general education.

Several professionals assisted the disadvantaged in the model programs. Special skill teachers guided the educationally disadvantaged to improve their facilities in the wide spectrum of language arts, with special emphasis on remedial reading. Experienced vocational counselors who had received recent training were also available for assisting students to understand their problems, to explore their vocational potential and to seek channels for communicating effectively with future employees. Administrators in all four programs were recognized for their professional leadership traits and for their expertise in developing effective vocational programs.

As viewed by the investigators, a major asset of the model programs were the professional qualities of the instructional staff. The six instructors from the classes of students chosen for the sample appeared to be well trained in skill areas and to have had more on-the-job work experience than average for vocational educators in Mississippi. All six scored at least one standard deviation higher on attitudes toward teaching and attitudes toward students than did a statewide sample of teachers for disadvantaged in recent studies (Handley and Shill, 1973). Formal professional study completed by these educators of disadvantaged ranged from having earned an associate of science degree in junior college to holding a masters' degree.

Characteristics of Subjects

The 115 disadvantaged youth studying in eight classes of the four model programs comprised the sample for the disadvantaged vocational group. Upon entry to the special needs programs these students were judged by their counselors to be educationally unable to complete regular vocational studies without extra support. The students ranged in age from 14 to 19 years. Scholastically, they attended regular classes in high school with other students who were at least one year younger. Five of the classes were comprised of males. One class featured sewing skills in home economics for females. Percentages of the sex and racial composition of the sample are given in Table 1.

Disadvantaged Nonvocational Students

Since it was not possible within the time limits of the study to secure previously established control groups for comparison purposes, an attempt was made to locate a sample of disadvantaged students with similar background and educational problems who had not been exposed to vocational training. The assistance of guidance counselors in four high schools serving large populations of rural disadvantaged students was secured in the selection of 102 such students. These students came from socioeconomically disadvantaged homes and, in the opinion of their counselors, could not successfully complete regular programs of studies in vocational education. These students were also making marginal educational progress.

Only 93 of 102 students selected by their counselors to have the above characteristics completed the battery of attitudinal measures. These students comprised the nonvocational disadvantaged group sample. Data for racial and sex composition of this group are also given in Table 1.

Nondisadvantaged Vocational Group

To secure a sample of regular, nondisadvantaged vocational students,

Table 1

Sex and Race Composition of Comparison Groups

Subgroup	N	%
Disadvantaged Vocational	115	
Male	102	87.7
Female	13	12.3
White	13	12.3
Black	102	87.7
Disadvantaged Nonvocational	93	
Male	62	66.6
Female	31	33.3
White	22	23.7
Black	71	76.3
Nondisadvantaged Vocational	71	
Male	41	42.3
Female	30	57.7
White	12	16.9
Black	59	83.1

directors for two of the centers having model programs for the disadvantaged assisted in selecting 71 students as typical representative of their training programs. These students were making average or above progress in their vocational courses which included a broad spectrum of curriculum offerings. The sex and racial composition of the group is noted in Table 1.

Selection of Instruments

Data for the study were collected through utilization of five instruments: Crites' *Career Maturity Inventory/Attitude Scale*, Kilbane's *Survey of Pupil Opinion*, Super's *Work Values Inventory*, the *Attitudes Toward Vocational Programs* scale and the *Instructor Rating of Student Progress* scale.

Preliminary Studies of Instrumentation

A sample of 121 students who achieved at average (N=79) and below average (N=42) levels in vocational classes were selected as a preliminary sample to provide data for instrument validation. These students attended the upper three high school grades in a middle-eastern Mississippi community. During the spring of 1974 the *Survey of Pupil Opinion* and the *Work Values Inventory* were pretested with this sample. The two evaluation scales, the ATVP and the IRSP, were constructed and validated. Following are discussions of these instruments and the others employed in the study.

Career Maturity Inventory/Attitude Scale

The Attitude Scale of the *Career Maturity Inventory*, according to Crites (1973),was designed to measure attitudes that are critical in realistic career decision making. That selecting an occupation is a process which spans a considerable number of years, usually from late childhood to early adult, was the rationale upon which Crites developed his instrument.

As theorized by Crites, the attitudes associated with vocational development are clustered into five separate dimensions: (1) involvement in the career choice process; (2) orientation toward work; (3) independence in decision making; (4) preference for career choice factors and (5) conceptions of the career choice process. Crites designed the attitude scale with fifty true-false attitudinal statements which he believed indicative of these item clusters.

Internal consistency estimates for grades 6 through 12 were calculated with the Kuder Richardson Formula 20 and ranged from .65 to .84 with a mean of .74 (Crites, 1973). Since the instrument was planned to be composed of five related, but not identical clusters of traits, these measures of internal consistency for the total attitude score did not appear unreasonable.

Crites also reported a correlation of .71 for 1,648 students in stability studies when the subjects were tested and retested over a one year interval. Crites (1973) predicted that this test-retest relationship was low enough to allow for maturational variance but high enough to establish systematic measurement for the variable being quantified.

Two different approaches were cited by Crites to derive measures of content validity, one of which was theoretical and the other empirical. The content of items were derived from central concepts in career development theory (Underwood, 1957) and then constructed from relevant instances of verbal vocational behavior. To obtain empirical support for the inclusion of items on the test, Hall (1962) asked ten expert judges (five male and female counseling psychologists) to designate which they considered to be the most mature response to each item on the attitude scale. The percentage of agreement for scoring items was 74 percent.

Criterion validity studies reviewed by Crites (1973) found the Attitudes' Scale significantly correlated with measures of realism in occupational aspirations, consistency, decision and realism in career choice. However, Wilstach (1967) reported nonsignificant correlations between the Attitude Scale and Super's Indices of Vocational Maturity. From these findings it appears that the data related to criterion validity of the Attitude Scale are somewhat inconclusive.

The construct validity data in reference to response bias are also somewhat inconclusive. Carek (1965) concluded that the response set in the instrument had negligible influence upon the Attitude Scale scores. Shirts (1968) studied the response style with a 'normative reversal' form of the attitude scale and found that fifth graders in his sample were less consistent in their responses to the standard and reversed forms from test to retest than when they were administered the scale on both occasions. Crites (1971) attempted to define this source of score variance more explicitly and asserted that response style has no significant effect on the Attitude Scale.

Work Value Inventory

Super's Work Value Inventory was the instrument employed to study the values which the adolescents seek in association with their future jobs. According to Super (1970), the instrument assesses the values which are extrinsic as well as those which are intrinsic in work, the satisfaction which individuals seek in work, and the satisfaction which may be concomitants or outcomes of work. The instrument measures motivation for work in 15 areas: creativity, management, achievement, surroundings, supervisory relations, way of life, security, associates, esthetics, prestige, independence, variety, economic returns, altruism and intellectual stimulation.

The WVI contains 45 items which describe values or outcomes associated with jobs. Subjects rate each of the items as to whether the stated outcome is "very important", "important", "moderately important", "of little importance" or "unimportant" to them in the job they seek.

Gable and Pruzek (1971) factor analyzed the Work Value Inventory and found that Super's grouping of items within subscales were reasonable and sufficient for describing the relationships advanced by the author. Though all of the 15 subscales were not found to be independent of each other, the 15 measures did possess internal consistency.

Survey of Pupil Opinion (SURPO)

From the literature self concept or self esteem appeared to be an important dimension of readiness associated with career maturity. In adolescents self as related to the school scene or situation had been demonstrated to be related to career maturity (Cribs and Sembler, 1967). In the present study the need for a spychometric device which correlated well with traditional measures of self concept, yet measured dimensions of attitudes associated with school and school work was conceptualized.

The Survey of Pupil Opinion, an instrument developed by Kilbane (1972) in the public schools of Cleveland, Ohio, appeared appropriate for this task. Kilbane and associates developed the instrument to assess attitudes toward self and school educationally disadvantaged students who had difficulties in reading. In the Cleveland studies the instrument was found to yield three independent factors involving 24 of the original 30 items in the instrument. The factors were designated Social Perceptions (seven items), Perception of Teacher (nine items), and Perception of Self-as-Student (eight items). Test-retest correlations for the total score of the instrument yielded an $r=.71$. A copy of the SURPO are presented in Appendix A.

This instrument was submitted to 121 subjects in a Mississippi sample of vocational students rated as average and below average in achievement by their instructors in preliminary studies preceding the reported investigation. The results were factor analyzed and, again, three factors were discovered. The composition of the factors, however, differed somewhat from that discovered by Kilbane. In Table 2 the items found in each factor in the Mississippi study are presented, along with the reference to the factor with which they were associated in the Kilbane study.

Only 16 of the 30 items loaded to similar factors in both the Mississippi and Ohio studies. However, six of the items (Nos. 2,10, 14, 15, 24 and 25) which did not load heavy enough to be included in any of the factors in Kilbane's study were found to contribute

Table 2

Composition of Factors for Survey of Pupil Opinion as Assessed in Mississippi and Ohio Samples*

Factor	Item	Loading in Mississippi Sample	Loading in* Ohio Sample
Factor I: Self-as-Student	1. Chances are good that I'll succeed in school.	I: .5539	I: .5183
	2. I like to read.	I: .4011	
	4. School is a waste of time.	I:-.5840	II:-.4445
	6. I think school is fun.	I: .4754	III: .6035
	8. I have a good time in school.	I: .5168	III: .6414
	10. I watch the clock during class.	I:-.4170	
	11. I think I'm doing better in school this year than I did last year.	I: .4566	I: .4750
	12. I do my assignments on time.	I: .5211	I: .4672
	16. School is boring.	I:-.5576	II:-.4462

Table 2--Continued

Factor	Item	Loading in Mississippi Sample	Loading in Ohio Sample
Factor I: Self-as-Student	17. I take my schoolwork seriously.	I: .5707	I: .5829
	23. I look forward to my classes.	I: .4197	III: .4085
	27. I wish I could quit school.	I:-.4819	
Factor II: Teacher Perceptions	3. Teachers are fair.	II: .4793	II: .4814
	7. The school rules make sense.	II: .5175	II: .4758
	13. Teachers expect too much of students.	II:-.4237	II:-.5311
	19. My teachers play favorites.	II:-.4156	II:-.4563
	21. My teachers pick on me too much.	II:-.3760	II:-.5272
	24. Teachers are too strict.	II:-.3074	II:-.5888
Factor III: Social Perceptions	5. My parents look at my report card.	III: .4978	I: .4959

Table 2--Continued

Factor	Item	Loading in Mississippi Sample	Loading in Ohio Sample
Factor III: Social Perceptions	9. Students in this school are friendly.	III: .5501	III: .4323
	14. I ask my teachers for help.	III: .4442	
	15. My teachers understand me.	III: .5137	
	18. Teachers give me the help I need in school.	III: .5643	I: .4191
	20. I like my teachers.	III: .4015	III: .5483
	22. My teachers can take a joke.	III: .4471	III: .4878
	25. My parents like my school.	III: .5030	
	26. I get along well with my teachers.	III: .5475	III: .4141
	28. I come to school on time.	III: .5023	III: .3961
	30. Teachers are friendly.	III: .5968	II: .4902
	29. I get along well with other students.	III: .5423	III: .4318

*Factor letters (I,II,III) have been changed to coincide with those found in the Mississippi Sample.

significantly to the derived factors in these preliminary studies.

In the validation studies, the "below average" and "average" samples of high school students were found to differ significantly ($p<.05$) on scores from all three of the SURPO factors, as well as on the total score (see Table 3). All factors of SURPO were found to correlate significantly with the overall self concept score of the Tennessee Self Concept Scale as seen on Table 4. The self-as-student factor and the teacher perception factor also correlated significantly with the overall grade point average earned by the vocational students during the previous year. The total score, as well as the three factors of SURPO also correlated significantly with their school attendance for the previous year.

In test-retest studies where 42 of the students were requested to respond again to the instrument after a one week interval, the following reliability coefficients were noted: Factor I, $r=.78$; Factor II, $r=.86$; Factor III, $r=.69$; Overall Score, $r=.82$.

The factors computed in the Mississippi sample were utilized for studying the characteristics of the three groups in the present study toward self in school.

Attitudes Toward Vocational Program

The Attitudes Toward Vocational Program (ATVP) instrument was constructured to quantify the overall feelings which students have toward vocational programs in which they are enrolled. It is composed of five questions which subjects answer on a "yes", "undecided", "no" continuum. The five items inquired how the

Table 3

Comparison of Means for Average and Below Average Groups on Survey of Pupil Opinion

Factors	Below Average	Average	F
Self as Student	34.26	40.23	7.31*
Teacher Perceptions	13.61	15.11	5.02*
Social Perceptions	31.54	40.72	7.24*
Overall School Attitude	91.22	97.16	11.07*

*Significant at .05 level.
**Significant at .01 level.

Table 4

Correlation of Self in School Attitudes with Overall Self Concept, Scholastic Achievement and School Attendance for High School Vocational Students (N=121)

Variables	Correlates		
	GPA	Self Concept	School Attendance
SURPO Scales			
Self-as-Student	.38	.76	.43
Teacher Perceptions	.44	.46	.41
Social Perceptions	.21	.43	.27
Overall School	.41	.69	.39
Attitudes Toward Vocational Programs	.79	.54	.65
Instructor Ratings of Student Progress	.86	.61	.71

*Significant at .05 level.
**Significant at .01 level.

subjects liked their vocational education training, whether they believed they were learning some skills and information that would help them on future jobs, whether they planned to finish up their course of study, whether they would recommend the same vocational education programs to their friends and whether they were pleased that they took the program of vocational study instead of other school work. A copy of this instrument is included in Appendix B.

The five items on the questionnaire were those selected from a pool of 30 items which contributed significantly to the discrimination between two groups, each composed of 50 students which were rated "below average" and "average or above" in vocational achievement, respectively, by their instructors. These same items loaded heavily on a single-factor derived from a principal component analysis of the original 30 items which accounted for 78% of the variance shared among the separate items.

An alpha coefficient, a measure of internal consistency which Veldman (1967) equates with a Kuder-Richardson 20 coefficient of .94, was computed for the ATVP. A test-retest reliability coefficient of .83 was found for 42 subjects tested twice over a week's interval in preliminary studies.

Instructor Rating of Student Progress Scale (IRSP)

On the IRSP instructors were requested to rate the achievement of students in their classes in vocational education in terms of their projected potential for working independently in the skill area of training after completion of the high school course of studies.

The students were given an overall rating on a 5 to 1 scale with a "5" designating a student would be able to perform independently on the job in his trained area without direct supervision after completion of his training. A rating of "4" indicated a student projected to be able to perform well on the job with only routine supervision. A rating of "3" was used to designate students who, in the opinion of their instructors, were making regular progress, and would be able to perform adequately on the job with regular supervision. Students who rated "2" on the IRSP Scale were making slow progress, as viewed by their instructors, and would probably need strong supportive supervision to perform adequately on a job in the training area after completion of their high school work. A rating of "1" indicated that the student was making no progress and, if his motivation did not change, he would not be able to perform adequately on the job, even with supportive supervision.

This instrument was also pretested in the preliminary studies of 121 students in the middle Mississippi sample of average and below average students enrolled in vocational education classes. In this study approximately 8% of the subjects were rated "5", 14% were rated "4", 39% were rated "3", 24% were rated "2" and 15% were rated as "1." In two ratings of 118 students given over one week intervals, a test-retest reliability coefficient of .84 was calculated. These data appear to indicate that teachers were able to relate progress of selected students to each of the five different levels rather consistently. In Table 3 it can also be noted that the instructors' ratings of students' progress in vocational education courses correlated significantly with overall GPA (r=.86), overall self concept (r=.61) and school attendance (r=.71).

Collection of Data

After the instruments were selected and pretested, they were administered to subjects during the early spring semester of 1975. Data were collected by the principal investigator and two graduate students with extensive training in psychological testing. Instruments were administered in small groups ranging in size from 12 to 21 individuals for all subjects except those comprising the nondisadvantaged vocational group. These groups contained from 25 to 32 subjects during the testing period.

Directions for responding to all instruments, as well as all items on the questionnaires, were read aloud by the psychometrists at a pace slow enough that every student could follow carefully and mark his choice of items. This oral presentation was necessary since many of the students had been found in preliminary investigations not to be able to read the items well enough to comprehend them.

Analysis of Data

Univariate analysis of variance models were utilized to compare means for the three groups for variables measured by the subscales of the Work Value Inventory, the Survey of Pupil Opinion and the Attitude Scale of the Career Maturity Inventory. Correlated t-tests were also computed to compare means for work values within each group of subjects. In multivariate analyses, two different statistical models of discriminant analysis were used to differentiate among the three groups. A stepwise discriminant analysis statistical program developed by Nie and Associates (1972) was employed to determine which subscales discriminated significantly among the disadvantaged vocational, the disadvantaged nonvocational and the nondisadvantaged vocational groups. Group membership for the three categories of subjects were also predicted with a discriminant analysis program developed by Dixon (1973).

For data analysis within the vocationally disadvantaged group, a multiple regression model (Dixon, 1973) was utilized to show the relationship of the work values and other attitudes to ratings of students' progress, to students' attitudes toward vocational education programs and to measures of subjects' career maturity. The relationship of the predictor set of work values and related attitudes to a set of criterion variables composed of three school related attitudes was assessed with a canonical correlation model described by Veldman (1967).

A G image rotational factor analysis model was also utilized to reduce the matrix of 22 attitude measures for the disadvantaged vocational group to more simple dimensions (Veldman, 1967).

IV. ANALYSIS OF DATA

This investigation of characteristics of rural disadvantaged students enrolled in quality high school level programs in vocational education in Mississippi was structured around ten broad research questions. The data were analyzed and interpreted in terms of these 10 sub-problems.

Acceptance of Vocational Programs

The first research question focused on determining the attitudes of the disadvantaged students toward their vocational education study program. Specifically, it inquired how many of the disadvantaged vocational students: (1) liked their vocational classes better than their other school work, (2) thought that they were learning some skills and information that would help them to get a job in the future, (3) planned to finish their course of study and graduate from high school, (4) would recommend that one of their friends take the same training program and (5) were pleased they had enrolled in the present vocational program of study instead of taking regular school work.

The Attitudes Toward Vocational Programs (ATVP) scale was employed to measure these attitudes for the disadvantaged vocational subjects. Data derived from this analysis, recorded in terms of percentage of response for each category, are given in Table 5.

For all questions more of the subjects responded "yes", rather than "no" or "undecided" in the vocational disadvantaged sample. These students who were participating in the model programs designed to fit

Table 5

Percentage of Disadvantaged Vocational Students
Responding in Different Satisfaction Levels
on Attitudes Toward Vocational Program Scale*

Item	% of Responses		
	Yes	Undecided	No
1. Do you like your vocational education training better than you other school work?	74.8	13.9	10.4
2. Do you think that you are learning some skills and information that will help you to get and keep a job in the future?	93.9	2.6	2.6
3. Do you plan to finish up your course of study and graduate from high school?	84.3	13.0	1.7
4. Would you recommend that one of your friends take the same vocational training program in high school in which you are enrolled?	84.3	5.2	9.6
5. Are you pleased that you took the program of vocational study instead of other school work while in high school?	80.0	2.6	15.7
Average			

*Percentages do not add up to 100% for each question since the responses were left blank by some individuals.

their needs responded most favorably on the question related to whether they were learning useful skills and knowledge. Though their responses were less favorable regarding whether they were pleased that they took the vocational program study, still 80% of the group of 115 individuals answered "yes." These data appear to indicate that the disadvantaged vocational group of high school students exhibited favorable attitudes toward their vocational education programs.

Throughout the preliminary and comprehensive studies of this investigation, the Attitudes Toward Vocational Programs scale was administered to 94 socioeconomically nondisadvantaged students enrolled in vocational programs. To answer the second research question which asked how the overall attitudes of the disadvantaged vocational group compared with that of a norm group of nondisadvantaged vocational students, the ATVP was scored for both groups (i.e., the norm group of regular vocational students and the disadvantaged vocational group) on a 3.0 scale. Means and F ratios for comparing the two groups on each item and the total score of the ATVP are given in Table 6.

Significant differences showing more favorable attitudes toward vocational programs for the disadvantaged vocational group over a norm group of nondisadvantaged vocational students were found for the overall score on the ATVP and for two of the separate items on the instrument. The groups apparently differed most on whether they liked their vocational education training program better than other school work and whether or not they would recommend the program to other

Table 6

Comparison of Means for Disadvantaged Vocational (DV) and Norm Groups of Regular Vocational Students (NDV) on Items of the STVP Scale

Item	Group Means DV (N=115)	NDV (N=94)	F Ratio
1. Do you like your vocational education training better than your other school work?	2.66	2.31	4.48*
2. Do you think that you are learning some skills and information that will help you to get and keep a job?	2.93	2.88	1.16
3. Do you plan to finish up your course of study and graduate from high school?	2.73	2.66	1.84
4. Would you recommend that one of your friends take the same vocational training program in high school?	2.71	2.52	5.02*
5. Are you pleased that you took the program of vocational study instead of other school work while in high school?	2.69	2.51	2.78
Overall Attitude Score	13.72	11.69	6.42*

*Significant at .05 level.

students. In both cases, the disadvantaged vocational subjects indicated the more favorable responses.

In summation, for data derived from studying the first two research questions, it appears that the disadvantaged vocational group, as a whole, was more satisfied with its training program and expressed more positive overall attitudes toward their vocational studies than did the norm sample of nondisadvantaged vocational students.

Comparison of Career Readiness Attitudes Among Groups

In order to describe the work readiness status for the disadvantaged group of rural, secondary students more succinctly, their attitudes related to self in school, work values and career maturity were compared with those of disadvantaged nonvocational and nondisadvantaged vocational reference groups of subjects. Two types of statistical studies, univariate and multivariate, were used for making these comparisons.

Univariate Studies

Attitudinal dimensions of the three groups as measured by the Survey of Pupil Opinion (SURPO), Work Value Inventory,(WVI) and the Career Maturity Inventory (CMI/A) served as criterion measures for comparing means for the three groups as indicated in Research Question No. 3. Analysis of variance models with accompanying Scheffe tests as post hoc measures were used for analyzing data. The .05 level of significance was employed for rejecting statistical null hypotheses.

Attitudes Toward Self and School

Subjects' attitudes toward self and school were measured with the Survey of Pupil Opinion. The groups were compared on the three factors derived from this instrument, as well as the total self and school score of the SURPO.

Comparisons of means for the two disadvantaged groups of students and the regular vocational students are presented in Table 7. Significant differences were indicated in the univariate analysis of variance models for each of the three factors, as well as the total score. When the Scheffe test was calculated for making comparisons among mean pairs, the relationships summarized in Table 8 resulted. The disadvantaged students enrolled in quality vocational programs scored significantly different ($p \leq .05$) from the disadvantaged nonvocational group on all four scales of the SURPO.

On the Self as Student factor, found to correlate significantly with overall self concept and overall grade point averages of students in preliminary studies, the disadvantaged vocational group scored significantly higher with a mean of 43.74 than both the disadvantaged nonvocational ($\bar{X}=29.55$) and the nondisadvantaged vocational ($\bar{X}=39.74$) groups. These data appear to indicate that students from the quality vocational programs for disadvantaged saw themselves as doing better in school and as more interested in their school work than did their counterparts who had not studied in vocational programs. The students from the model programs also expressed more positive self concepts in school orientations than did the comparison group of nondisadvantaged vocational students.

On the Teacher Perception factor the disadvantaged vocational group ($\bar{X}=12.78$) scored significantly higher than both of the other two groups. Generally, these students from the quality programs appeared

Table 7

Comparison of Attitudes Toward Self and School for Disadvantaged Non-Vocational (DNV), Disadvantaged Vocational (DV) and Non-Disadvantaged Vocational Students

Criterion	Non-Vocational Disadvantaged		Vocational Disadvantaged		Vocational Non-Disadv.		F Ratio
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	
Self as Student	29.55	11.87	43.74	6.83	39.74	7.41	65.61**
Teacher Perceptions	11.09	3.24	12.78	2.57	10.83	2.87	13.32**
Social Perceptions	35.44	11.43	44.52	5.90	41.77	6.39	31.72**
Overall School Attitudes	81.77	26.32	107.85	12.87	96.74	14.83	49.59**

**Significant at .01 level.

to see teachers as expecting a more reasonable amount of work, as being more fair and friendly and as being willing to help students if asked. The disadvantaged nonvocational group and the nondisadvantaged group with respective means of 11.09 and 10.83 did not differ significantly on this trait.

In pilot studies, the Social Perceptions factor proved to be the most difficult dimension of the SURPO instrument to validate. Some of the items, for example, which Kilbane (1972) reported as associated with this factor, did not appear so in the rural Mississippi sample studied in preliminary investigations. In view of these studies, this subscale appears to be most heavily loaded on items which relate primarily to inter-personal relationships in school between students and teacher and other students, and parents and students in school related issues. Persons who score high on this factor view themselves as having positive relations with teachers, students and parents on school related issues.

In the Scheffe test the disadvantaged vocational group's mean on this inter-personal factor ($\bar{X}$=44.52) did not differ significantly from the nondisadvantaged vocational students ($\bar{X}$=41.77). Both of these groups, however, significantly outscored the disadvantaged nonvocational group ($\bar{X}$=35.44) on this dimension of behavior.

The total score denoting overall self in school attitudes of subjects discriminated significantly among the three groups. The disadvantaged vocational students from quality programs ($\bar{X}$=107.85) outscored the nondisadvantaged vocational group as indicated by the Scheffe test. Subsequently, the nondisadvantaged group ($\bar{X}$=96.74) rated themselves higher on overall attitudes toward self in school than did the disadvantaged group not enrolled in vocational programs ($\bar{X}$=81.77).

Career Maturity

The progress of the groups toward career maturity was measured by the attitude scale of Crites' Career Maturity Inventory (CMI). F ratios comparing the disadvantaged vocational, disadvantaged nonvocational and the nondisadvantaged vocational groups of subjects are given in Table 9. Mean differences predicted by the analysis of variance model were confirmed by utilizing the Scheffe test in post hoc comparisons. At the .01 level all three groups were found to be significantly different from each other on the attitude scale of the CMI. The nondisadvantaged group ($\bar{X}$=33.62) scored significantly higher on this facet of career maturity and the disadvantaged nonvocational group scored lowest ($\bar{X}$=20.26). The disadvantaged vocational group with a mean of 26.56 occupied the intermediate position on this scale, scoring significantly higher on these attitudes than the nonvocational group and significantly lower than the nondisadvantaged group.

Then, utilizing Crites' instrument as a criterion variable, the attitudes of regular vocational students did appear to be more developed toward career maturity at the time and under the conditions of this study. The students in the special program, however, seemed to be making more progress toward career maturity than were their counterparts who were not in vocational programs.

Work Values

Significant differences in 12 of the 15 assessed work values were

Table 8

Results from Scheffe's Test for Comparing Group Means on Factors Derived from the Survey of Pupil Opinion

Factors	Decisions at .05 level
Self as Student	DV > NDV > DNV
Teacher Perceptions	DV > DNV = NDV
Social Perceptions	DV = NDV > DNV
Overall School Attitude	DV > NDV > DNV

DV=Disadvantaged Vocational Group
DNV=Disadvantaged Non-Vocational Group
NDV=Non-Disadvantaged Vocational Group

Table 9

Career Maturity Measures for Disadvantaged Vocational, Nondisadvantaged Vocational and Disadvantaged Nonvocational Groups

Groups	$\bar{X}$	S.D.	F Ratio
Nondisadvantaged Vocational	20.26	9.01	78.23**
Disadvantaged Vocational	26.56	5.62	
Disadvantaged Nonvocational	33.62	4.85	

**Significant at .01 level.

predicted among the three groups of rural students in the variance model. The subscales of Super's Work Value Inventory were employed as criterion variables. Means for the groups are presented in Table 10. Results discovered in the post hoc test are given in Table 11. A brief description of each groups' rankings of the work values on the importance scale in Super's Work Value Inventory not only illustrated the differences in motivations which existed in the population of rural secondary students studied but also suggested the complexity of the work values' patterns which these students perceived in themselves.

The disadvantaged vocational and nondisadvantaged vocational groups with means of 11.99 and 11.14, respectively, did not differ significantly on their rankings of creativity as a work value. Their individual rankings generally ranged in the "moderately important" to "important" range of Super's scale. The disadvantaged nonvocational group with a mean of 7.41 scored significantly lower than both vocational groups on this trait. Hence, this group expressed less motive for contributing new ideas or creating something new than did either of the vocational groups of high school students.

Significant differences at the .01 level were found among all three groups on the management scale of work values. With a mean of 11.23, the disadvantaged vocational group gave an overall rating of "moderately important" to the desire to have authority over others in a job and to the use of leadership abilities in work. With modal responses on this scale also located in the "moderately important" interval on this trait, the nondisadvantaged vocational group occupied the

Table 10

Work Values for Disadvantaged Vocational, Disadvantaged Nonvocational and Nondisadvantaged Vocational Students

Work Values	Disadvantaged Vocational		Disadvantaged Non-Vocational		Non-Disadv. Vocational		F Ratio
	$\bar{X}$	S.D.	$\bar{X}$	S.D.	$\bar{X}$	S.D.	
Creativity	11.99	2.05	7.41	3.63	11.14	2.71	70.04**
Management	11.23	2.07	6.94	3.61	10.01	2.65	65.69**
Achievement	12.44	1.73	9.83	2.64	12.78	1.82	53.65**
Surroundings	12.55	1.72	11.86	2.67	12.56	2.16	3.12*
Supervisory Relations	12.43	2.11	12.06	2.09	12.55	2.17	1.24
Way of Life	12.98	1.94	11.30	2.32	13.42	1.61	27.55**
Security	13.66	1.41	13.59	1.71	13.22	1.80	1.71
Associates	11.95	1.66	11.37	1.99	11.77	2.13	2.47
Esthetics	11.37	2.15	9.66	3.22	9.49	2.63	15.26**
Prestige	12.14	2.09	9.41	2.47	11.45	2.25	39.06**
Independence	12.50	1.95	8.13	3.13	11.70	2.65	79.25**
Variety	11.12	2.28	6.85	3.70	10.99	2.66	64.92**
Economic Returns	14.04	1.49	13.08	1.99	13.16	1.81	9.41**
Altruism	12.16	1.93	9.99	2.47	12.07	2.47	27.58**
Intellectual Stimulation	12.06	1.87	6.80	3.67	10.68	2.56	96.50**

*Significant at .05 level.
**Significant at .01 level.

Table 11

Results of Scheffe's Test for Comparing Means for Work Values of Three Groups on the Work Value Inventory

Work Value	Decision at .05 level
Creativity	DV= NDV >DNV
Management	DV> NDV >DNV
Achievement	NDV= DV >DNV
Surroundings	NDV= DV =DNV
Supervisory Relations	NDV= DV =DNV
Way of Life	NDV= DV >DNV
Security	DV= DNV =NDV
Associates	DV= NDV =DNV
Esthetics	DV> DNV =NDV
Prestige	DV= NDV >DNV
Independence	DV= NDV >DNV
Variety	DV= NDV >DNV
Economic Returns	DV> NDV =DNV
Altruism	DV= NDV > DNV
Intellectual Stimulation	DV > NDV > DNV

DV=Disadvantaged Vocational Group
DNV=Disadvantaged Non-Vocational Group
NDV=Non-Disadvantaged Vocational Group

intermediate position of the groups compared on the management work value. They scored significantly lower than the disadvantaged vocational group and significantly higher than the disadvantaged nonvocational group. The disadvantaged nonvocational group with a mean of 6.94 rated management as "of little importance" as a work value.

Ranking achievement from "moderately important" to "important", the disadvantaged vocational group ($\bar{X}$=12.44) and the nondisadvantaged group ($\bar{X}$=12.78) rated the achievement work value significantly higher than did the disadvantaged nonvocational group. The group of disadvantaged students in regular school programs, with a mean of 9.83, apparently considered personal recognition of their own accomplishments, the dimension of values measured on the achievement subscale, to be of less importance.

Though a significant difference in means for the three groups on the surroundings subscale of Super's instrument was predicted by the variance model at the .05 level, this prediction was not substantiated by the Scheffe test. With means ranging from 11.86 to 12.55, members of all three groups tended to rate the need for comfortable and pleasant work facilities as moderately important on the Super instrument.

The three groups, also, did not differ significantly on the value of having favorable supervisory relations at work. All three of the groups rated this value as "important." Means for the groups ranged from 12.06 to 12.55 on this work value scale.

Having a job that would allow them to lead the kind of life they would most enjoy rated highly as a work value for both groups of students enrolled in vocational classes. At the .05 level, however, the disadvantaged nonvocational group with a mean of 11.30 averaged significantly lower on this scale than the other two groups.

The security dimension of his instrument is projected by Super (1970) as reflecting work values associated with job continuity. In the analysis of variance, no significant differences were discovered among the means for the three groups on this work value dimension. Over 90% of all subjects ranked security from "important" to "very important" as a characteristic of their preferred job.

Though the variance model indicated an F ratio in comparison of the means of the three groups which approached significance ($p < .08$), no mean differences in the associates work values were verified at the .05 level on the Scheffe test. With group means ranging from 11.37 to 11.95, ninety percent of all subjects rated the value of having good contacts and forming friendships with fellow workers as "moderately important" on the work value scale.

The desire to make attractive products, to add beauty to the world and to have artistic ability in one's work are the dimensions of values classified by Super as esthetics. With a mean of 11.37, over 90% of the disadvantaged vocational students in this study rated esthetics as "moderately important" to "important" as a work value. At the .05 level, both the nondisadvantaged vocational group ($\bar{X}$=9.49) and the disadvantaged nonvocational group ($\bar{X}$=9.66) scored themselves in the lower range of the "moderately important" range on this work value.

The two vocational groups of subjects did not differ significantly on the value of prestige in their future jobs. The disadvantaged vocational group with the mean of 12.14 and the nondisadvantaged group with a mean of 11.45 both rated the need to gain prestige in their field as an "important" work value. In contrast, with a mean of 9.41 on this scale, the disadvantaged nonvocational group of students apparently gave significantly less importance to the work value of prestige. Ninety-five percent of their group rated prestige as a "moderately important" work value.

The attraction of independence in work as characterized by Super as the opportunity to make one's own decisions and to be one's own boss, also appeared to be significantly less appealing to the disadvantaged nonvocational group of students as a work value. When the scores of three groups were compared on this trait, the nonvocational students were found to have rated themselves significantly lower ($\bar{X}$=12.50) and the nondisadvantaged ($\bar{X}$=11.70) vocational groups of students were found in the "important" range as specified on Super's instrument.

With a mean of 6.85, ninety-five percent of the disadvantaged nonvocational group were found to rate variety as "of little importance" as a work value. Again, the means for disadvantaged vocational group and the nondisadvantaged vocational groups did not differ significantly on this work value. At the .05 level they both rated this dimension of work values characterized by the desire to do many different things in work as significantly more important than did the nonvocational group of disadvantaged subjects. The means for the disadvantaged and nondisadvantaged vocational groups, respectively, were 11.12 and 10.99.

The value of good economic returns for work was considered "important" by 95% of the disadvantaged vocational group. With a mean of 14.04, they rated this work value significantly higher than did the disadvantaged nonvocational and the nondisadvantaged vocational groups. The latter two groups did not differ significantly in their evaluations of the importance of economic returns as a work motivator. All three groups' scores on this value were generally distributed in the "important" range.

Altruism, the desire to pursue work in helping others or to add to the well-being of other people, appeared to be more characteristic of the work values associated with the two vocational groups of subjects. With means of 12.16 and 12.07, respectively, the disadvantaged and nondisadvantaged vocational groups, considered altruism as an "important" work value. At the .05 level on the Scheffe test, the disadvantaged nonvocational group were found to have a significantly lower mean ($\bar{X}$=9.99) on this subscale. Over 95% of these students marked altruism as "moderately important" on the Super instrument.

In relationship to intellectual stimulation, the disadvantaged nonvocational sample of subjects scored themselves significantly lower ($\bar{X}$=6.80) on the desirability of needing to stay alert, or to have to keep solving new problems, at work. With a mean of 10.68 on this dimension of work values, the nondisadvantaged vocational group scored significantly higher than the disadvantaged nonvocational group and significantly lower than the disadvantaged vocational group

($\bar{X}$=12.06). Generally, the disadvantaged vocational students rated intellectual stimulation in work as "important" while the nondisadvantaged students scored this value as "moderately important" and, finally, the nonvocational group rated the need to keep mentally alert as "of little importance" as a work value.

From the above analysis of data it appears that the work values of the two vocational groups are more nearly alike than those of any of the other pairs of groups studied. In relationship to the nondisadvantaged group of students, the disadvantaged students from highly recommended vocational programs did not differ significantly on the following 11 of Super's 15 work values: security, associates, supervisory relations, creativity, achievement, way of life, prestige, independence, variety, and altruism. Significantly higher means, however, were found for the disadvantaged students in the vocational programs and the sample of nondisadvantaged students studying in regular programs on work values related to intellectual stimulation, economic returns, esthetics and management.

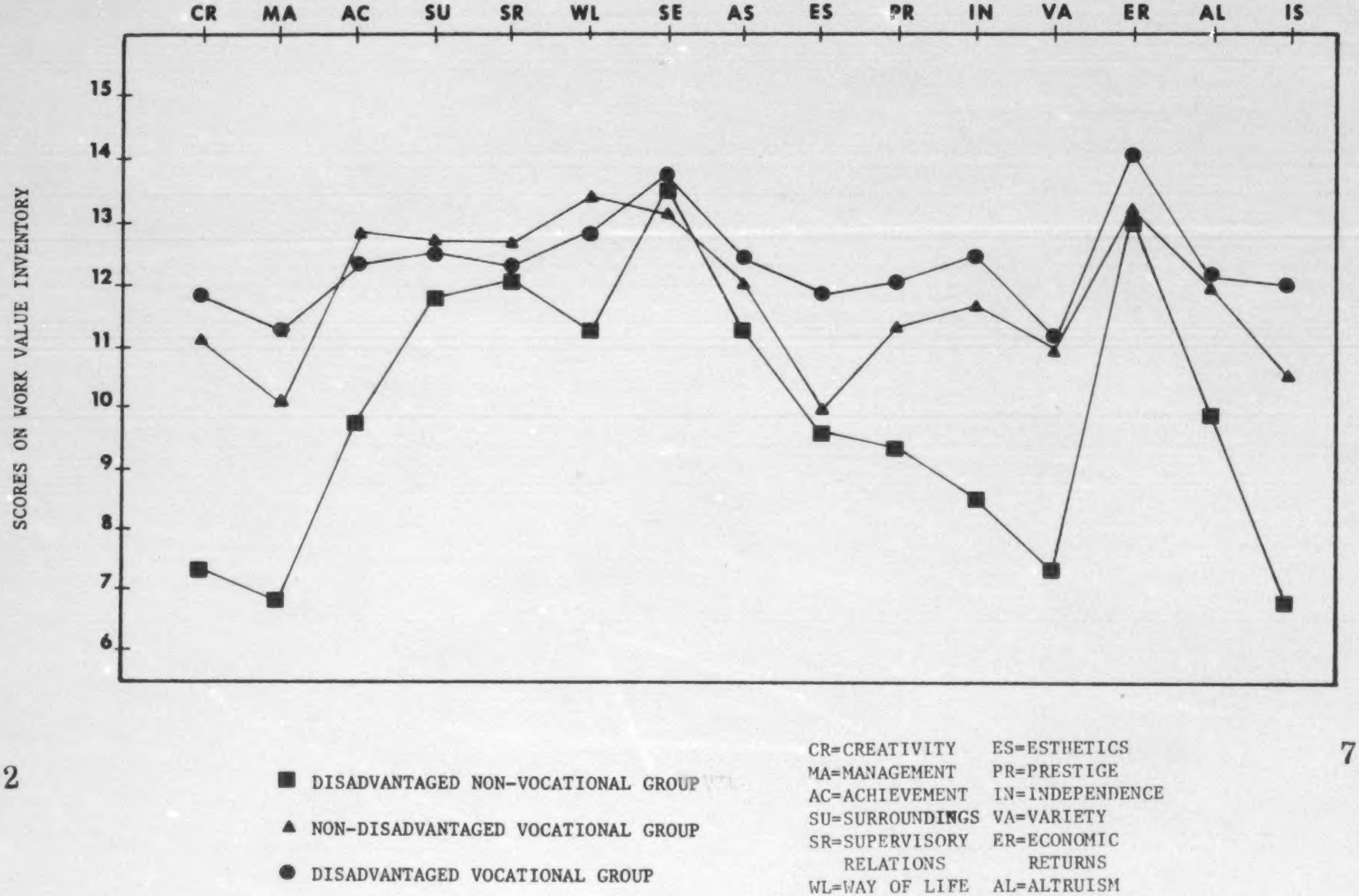
When compared with the disadvantaged nonvocational group, the work values for subjects in the exemplary programs of vocational education for disadvantaged were found to be significantly higher in 11 areas: creativity, management, achievement, way of life, esthetics, prestige, independence, variety, economic returns, altruism and intellectual stimulation. Also, means for nine of the work value scales for the disadvantaged nonvocational group were found to be significantly lower than were those for the nondisadvantaged vocational group. The measures on which they differed were creativity, management, achievement, way of life, prestige, independence, variety, altruism and intellectual stimulation.

As can be seen on Figure 1 (Page 60) where the means for the three groups on all 15 of the work values studied are graphically depicted, the disadvantaged nonvocational group consistently as appeared to rate most of the work values lower than did either of the other two groups. However, since this group did rate security and economic returns in the "important" range this discrimination appears to offer supportive evidence that they did not give an overall negative rating pattern on the instrument. By a careful examination of the trend slopes among the pattern of the groups' responses on the graph, it can be noted that group means for this nonvocational group, though often significantly lower, did generally appear to follow the same pattern of rises and slumps as did the other two groups. The two most noticeable discrepancies were the lower means for the nonvocational subscales. Some investigators have suggested that perhaps the most meaningful implications in work values studies are not those found in between group comparisons, but rather in intra-group comparisons of means: e.g., perhaps more can be learned about the work motivators of subjects with similar training or experiences by ranking the means for specific work values within the group to determine their order of importance for a specific group.

How, then, did subjects in each of the groups in this study rank the work values in order of importance within their own group? To investigate this relationship, Super (1970) suggested that more attention should be paid to the two or three work values which subjects

FIGURE 1

MEAN WORK VALUES FOR THREE GROUPS OF SECONDARY STUDENTS



CR=CREATIVITY
MA=MANAGEMENT
AC=ACHIEVEMENT
SU=SURROUNDINGS
SR=SUPERVISORY RELATIONS
WL=WAY OF LIFE
SE=SECURITY
AS=ASSOCIATES
ES=ESTHETICS
PR=PRESTIGE
IN=INDEPENDENCE
VA=VARIETY
ER=ECONOMIC RETURNS
AL=ALTRUISM
IS=INTELLECTUAL STIMULATION

rate highest and lowest, respectively, to determine relative emphasis of values, all possible pairs of the 15 work values were compared within each of the three groups by the use of a correlated t test. Hopefully, this analysis would allow an examination of which work values were considered significantly more important within each of the three groups of rural secondary students.

Within the group of disadvantaged students attending model vocational programs, it was found that these students valued economic returns, security and way of life associated with a job as significantly more important than any of the other values assessed by Super's instrument. They also rated management, esthetics and variety as significantly less important. The other work values appeared to occupy a medium level of precedence in their responses when the means were compared. The correlated t ratios computed in these within group means comparisons are given in Table 12.

T ratios for comparing means for the work values scores for the disadvantaged nonvocational group are listed in Table 13. It was discovered that this group valued security, economic returns and favorable work surroundings (in that order) as significantly more important in work. Within their own group, they rated means for intellectual stimulation, esthetics and creativity as significantly less important.

The nondisadvantaged vocational students favored the same work values, economic returns, way of life and security, as significantly more important as did the disadvantaged vocational group. Also, in agreement with the disadvantaged vocational group, they appeared to

Table 12

T Ratios Comparing Means for Work Values Among
Disadvantaged Vocational Students[#]

Work Values	AC	MA	AC	SU	SR	WL	SE	AS	ES	PR	IN	VA	ER	AL	IS
Creativity		-3.19*	2.84*	2.99*	2.23*	4.58*	7.76*	.36	-3.15*	1.14	2.75*	-3.07*	9.68*	1.22	.87
Management			5.70*	6.07*	4.57*	7.45*	10.30*	3.53*	.23	4.38*	5.95*	-.82	12.36*	3.95*	3.59*
Achievement				.45	-.09	2.32*	6.34*	-2.34*	-5.20*	-1.26	.25	-5.96*	10.13*	-1.64	-2.39*
Surroundings					-.52	1.92	6.11*	-3.25*	-6.77*	-1.69	-.21	-6.71*	7.62*	-1.91	-2.30*
Supervisory Relations						2.46*	6.10*	-2.08*	-5.08*	-1.11	.31	-5.71*	9.35*	-1.40	-1.60
Way of Life							3.75*	-4.91*	-7.98*	-3.37*	-1.95	-7.64*	5.40*	-3.73*	-3.94*
Security								-9.55*	-11.78*	-7.68*	-6.65*	-10.78*	2.56*	-7.69*	-.36
Associates									3.20*	.92	2.67*	-4.08*	12.25*	.81	.47
Esthetics										3.88*	5.95*	-1.06	12.15*	4.34*	3.62*
Prestige											1.49	-4.25*	8.75*	-.08	-.43
Independence												-6.52*	7.93*	-1.60	-2.56*
Variety													13.05*	4.65*	4.24*
Economic Returns														-10.44*	-11.18*
Altruism															-.41
Intellectual Stimulation															

[#] Negative T Ratios indicate smaller means for horizontally listed variables.
[*] Significant at .05 level.

Table 13

T Ratios Comparing Means for Work Values Among
Disadvantaged Nonvocational Students #

Work Values	CR	MA	AC	SU	SR	WL	SE	AS	ES	PR	IN	VA	ER	AL	IS
Creativity		-2.10*	10.39*	12.71*	12.80*	11.36*	15.60*	8.88*	6.06*	6.65*	2.19*	-2.18*	14.07*	9.81*	-2.85*
Management			13.60*	12.37*	15.95*	15.99*	17.02*	10.85*	6.52*	9.52*	5.30*	-.41	15.48*	11.04*	-.64
Achievement				6.95*	9.43*	6.89*	12.86*	6.60*	-.50	-1.97	-7.33*	-12.76*	-10.86*	.93	-13.98*
Surroundings					.65	-1.61	6.52*	1.50	-7.15*	-8.45*	-9.97*	-11.92*	4.10*	-6.89*	-12.77*
Supervisory Relations						-3.89*	6.69*	-2.71*	-6.64*	-10.93*	-14.60*	-15.36*	3.99*	-8.21*	-15.32*
Way of Life							9.62*	.26	-4.38*	-9.54*	-12.05*	-15.66*	6.71*	-5.65*	-14.91*
Security								-11.26*	-11.45*	-16.55*	-15.55*	-16.48*	-3.20*	-13.81*	-16.86*
Associates									-5.07*	-7.29*	-9.14*	-10.88*	7.51*	-4.64*	-10.87*
Esthetics										-.78	-3.77*	-6.44*	9.79*	1.13	-6.70*
Prestige											-5.91*	-8.90*	13.84*	2.58*	-8.72*
Independence												-6.20*	13.83*	6.00*	-4.98*
Variety													14.45*	10.42*	-.18
Economic Returns														-11.95*	-14.79*
Altruism															.64
Intellectual Stimulation															

#Negative T Ratios indicate smaller means for horizontally listed variables.
*Significant at .05 level. (df=92)

rate management and esthetics as less important work values. Diverging somewhat from the disadvantaged vocational subjects, however, they considered intellectual stimulation as less important in their ranking of work values. Means for these last three variables were significantly lower than those derived for work values within this nondisadvantaged group. T ratios comparing the pairs of correlated means for nonvocational students are given in Table 14.

A consensus of these data on work values seems to indicate that all three groups studied appeared generally to favor the work values which Super (1970) characterized as materialistic (security, economic returns). They differed, however, on the values which had best attraction for them.

In comparison to the disadvantaged nonvocational subjects, the disadvantaged vocational group appeared to be motivated more by the self expression (intellectual stimulation, creativity, variety) and behavior control (management, prestige, independence) dimensions of future work.

In comparison to the more socioeconomically advantaged group, the differences appeared more complex. In the area of self expression, however, the disadvantaged group appeared to be more motivated by self expression values such as variety and intellectual stimulation. At the same time, they were also motivated by economic returns (materialistic) and management values (behavior control) than were the nondisadvantaged students.

Summary of Univariate Data

In the univariate analyses conducted with analysis of variance

Table 14

T Ratios Comparing Means for Work Values Among Nondisadvantaged Vocational Students[a]

Work Values	CR	MA	AC	SU	SR	WL	SE	AS	ES	PR	IN	VA	ER	AL	IS
Creativity		-3.69*	5.85*	4.33*	4.83*	7.61*	6.44*	2.04*	-4.86*	1.09	1.60	-.46	1.71*	2.60*	-1.34
Management			8.62*	7.56*	7.96*	10.57*	11.13*	6.21*	-1.47	5.65*	5.60*	2.87*	11.39*	4.92*	1.81
Achievement				-.84	-1.00	3.16*	1.77	-3.83*	-10.82*	-4.80*	-3.23*	-5.78*	1.43	-2.77*	-7.53*
Surroundings					-.06	4.08*	2.33*	-3.16*	-10.04*	-4.45*	-2.29*	-4.89*	2.19*	-1.62	-5.25*
Supervisory Relations						3.63*	2.72*	-2.87*	-10.64*	-4.13*	-2.24*	-4.90*	2.47*	-1.50	-5.87
Way of Life							-.80	-7.17*	-12.16*	-8.16*	-5.85*	-8.37*	-1.12	-4.68*	-8.86*
Security								-6.32*	-11.35*	-6.50*	-4.89*	-6.90*	-.28	-3.47*	-8.33*
Associates									-7.43*	-1.34	-.21	-2.34*	6.13*	.84	-3.14*
Esthetics										6.74*	5.32*	4.00*	10.58*	7.71*	3.12*
Prestige											.89	-1.63	7.04*	1.72	-2.11*
Independence												-1.87	4.84*	.76	-2.54*
Variety													6.63*	2.91*	-.73
Economic Returns														-3.14*	-7.99*
Altruism															-4.40*
Intellectual Stimulation															

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[a] Negative T Ratios indicate smaller means for horizontally listed variables.

*Significant at .05 level.

and *t* test statistics, the disadvantaged vocational group differed on 15 of the 20 attitudes studied. They differed from the nondisadvantaged vocational group on only eight of these same traits. From these data it appears that the two groups in vocational education were more alike in these attitudes than were the two disadvantaged groups. The two disadvantaged groups of rural youth differed on work values associated by Super with self expression, behavior control and goodness of life. Generally, all three groups appeared more motivated by the materialistic segments of the future work experience, however. In career maturity attitudes, the disadvantaged vocational students attending the model programs ranked in an intermediate position between the disadvantaged nonvocational group and the nondisadvantaged vocational students. On self in school attitudes, with the exception of social relations, the disadvantaged vocational group displayed significantly more positive attitudes.

Multivariate Studies of Group Differences

In univariate studies of differences among disadvantaged vocational, disadvantaged nonvocational and nondisadvantaged vocational groups, several overlaps of data appeared to exist. As can be noted in Table 15, relatively high correlation coefficients existed among the 20 attitudinal measures employed as criterion measures in the reported analyses. This observation suggested that perhaps a multivariate approach in which the three groups could be simultaneously compared on the best interacting pattern of personal traits might be more appropriate. The multivariate approach would eliminate utilization of redundant variables in final group descriptions and would also allow

Table 15

Simple Correlation of Selected Personal Variables for Combined Groups

	S/S	TP	SP	OSA	CMI-A	CR	MA	AC	SU	SR	WL	SE	AS	ES	PR	IN	VA	ER	AL	IS
Self as Student	1.00																			
Teacher Perceptions	.62	1.00																		
Social Perceptions	.73	.54	1.00																	
Overall School Attitude (OSA)	.93	.72	.90	1.00																
Career Maturity MI-A)	.41	.29	.40	.44	1.00															
Creativity (CR)	.49	.29	.45	.49	.31	1.00														
Management (MA)	.43	.22	.41	.43	.28	.64	1.00													
Achievement (AC)	.52	.29	.49	.54	.38	.64	.58	1.00												
Surroundings (SU)	.30	.13	.21	.26	.10	.40	.28	.38	1.00											
Supervisory Relations (SR)	.32	.19	.20	.29	.30	.36	.33	.49	.34	1.00										
Way of Life (WL)	.36	.23	.31	.36	.32	.41	.47	.53	.29	.51	1.00									
Security (SE)	.13	.05	.10	.12	.17	.20	.21	.28	.35	.38	.36	1.00								
Associates (AS)	.00	-.03	-.06	-.03	-.05	.15	.26	.17	.30	.28	.39	.43	1.00							
Esthetics (ES)	.32	.23	.19	.28	.10	.48	.33	.35	.49	.32	.27	.28	.32	1.00						
Prestige (PR)	.32	.22	.28	.32	.21	.49	.59	.46	.40	.38	.50	.39	.40	.42	1.00					
Independence (IN)	.31	.15	.34	.33	.25	.50	.64	.49	.28	.33	.47	.25	.26	.25	.56	1.00				
Variety (VA)	.47	.27	.43	.47	.30	.55	.61	.57	.27	.38	.48	.16	.19	.28	.47	.58	1.00			
Economic Returns (ER)	.10	-.01	.03	.07	.11	.25	.24	.32	.26	.41	.30	.55	.35	.21	.37	.26	.14	1.00		
Altruism (AL)	.51	.34	.41	.50	.34	.51	.38	.61	.41	.39	.44	.27	.18	.46	.39	.21	.41	.29	1.00	
Intellectual Stimulation (IS)	.54	.39	.51	.57	.46	.63	.60	.68	.27	.37	.45	.23	.15	.29	.42	.49	.50	.20	.53	1.00

for a more careful consideration of interacting variables.

A series of discriminant analysis functions were plotted in which different combinations of the 20 attitude scales on which responses for all 278 subjects were available were considered as discriminant variables. Essentially, the four sub-research questions explored at this point were: (A) What is the best combination of the 20 attitudinal variables for discriminating among the three groups? (B) How effective are measurements from each of the respective instruments with multiple subscales (WVI and Survey of Pupil Opinion) as predictors of the groups to which the subjects were assigned on a priority basis because of their educational and socioeconomic background? (C) What influence, if any, do the variables of age, sex and race have in interacting with the attitudinal measures in discriminating among the groups? These sub-problems concerned analyses for answering the fourth, fifth, sixth and seventh major research questions.

Two different statistical programs in discriminant analysis were used to examine the data to answer these questions. First, a stepwise discriminant analysis program developed by Nie and Associates (1975) was employed to determine the order of influence for the variables in the discriminating function. Then, a multiple group discriminant analysis program from the Biomedical Series (BMDO5M) edited by Dixon (1973) was used to predict group membership for each of the subjects on the basis of their measured attitudes. Altogether, seven different discriminant models were derived featuring different combination of variables in the functions.

Total Model Predictions of Group Differences

Intellectual stimulation as a work value was demonstrated to be the most influential variable in differentiating among the three groups of subjects classified as disadvantaged vocational, nondisadvantaged vocational and disadvantaged nonvocational, respectively, in the stepwise discriminant model. F ratios for assessing the differential significance of the variance of the 20 attitudes measured by the Survey of Pupil Opinion, the Work Value Inventory and the Career Maturity Inventory in the discriminant function are in Table 16.

After the variance in the differential model associated with intellectual stimulation had been removed, the Attitude Scale of the Career Maturity Inventory was the next significant function to discriminate among the three groups (.01 level). Then, in the following order seven other attitudinal subscales were found to discriminate among the groups of high school students: teacher perceptions (.01 level), independence (.01 level), self as student (.01 level), supervisory relations (.01 level), achievement (.05 level), economic returns (.05 level) and security (.05 level).

With one exception, differences on all of the nine variables found to be significant discriminators among groups had previously been found in the univariate studies (See Tables 8,9 and 11). As a separate predictor all three groups appeared to be equal in their assessment of the importance of good supervisory relations as a work value. In the discriminant set, however, it was found to

Table 16

Summary of Order of Entry for Twenty Attitudinal Measures on Discriminating Variables Among Three Groups of Subjects

Step. No.	Variable Entered	F When Entered	U-Statistic
1.	Intellectual Stimulation	94.20**	.5934
2.	Career Maturity Attitudes	54.21**	.4252
3.	Teacher Perceptions	12.60**	.3893
4.	Independence	11.82**	.3581
5.	Self as Student	8.78**	.3363
6.	Supervisory Relations	9.49**	.3142
7.	Achievement	6.49*	.2998
8.	Economic Returns	6.03*	.2969
9.	Security	4.12*	.2783
10.	Social Perceptions	2.51	.2731
11.	Esthetics	2.24	.2686
12.	Associates	2.94	.2627
13.	Surroundings	2.04	.2587
14.	Creativity	1.42	.2559
15.	Management	1.14	.2537
16.	Variety	1.36	.2511
17.	Prestige	1.13	.2489
18.	Way of Life	.94	.2471
19.	Overall School Attitude	.53	.2461
20.	Altruism	.31	.2455

*Significant at .05 level.
**Significant at .01 level.

contribute a significant amount of variance to the differential set (F=9.49). Hence, in combination with the other variables the influence of this work measure apparently discriminated more effectively than it did as a single criterion.

In Table 17, the F ratios for comparing groups at each level of the stepwise discriminant analysis model are given. As seen on this table significant differences at the .01 level existed among each set of groups compared at each stage of the stepwise discrimination analysis. It can be noted, however, that the F ratio depicting significant differences in the collective means for the disadvantaged vocational group and the nondisadvantaged vocational group (F=17.71) was lower than that calculated when the disadvantaged vocational group was compared with the disadvantaged nonvocational group (F=33.68) and the nondisadvantaged vocational groups was compared with the disadvantaged nonvocational group. These data offer some support for the conceptualized model advanced for career development of the disadvantaged students in the special programs.

In this analysis the 15 variables found to discriminate significantly between the disadvantaged vocational group and the two reference groups was reduced to nine variables: the attitudes scale of the CMI, five work values (intellectual stimulation, independence, achievement, economic returns and security and three factors of attitudes related to self in school (teacher perceptions, self as student and social perceptions).

Table 17

F Ratios Comparing Differences in Three Groups at Each Step of Stepwise Discriminant Analysis

Step No.	Variables in Equation	Groups Compared DV: DNV	DV:NDV	DNV:NDV
1.	IS	182.22**	10.84**	77.56**
2.	IS+CMI(A)	91.01**	48.70**	83.68**
3.	IS+CMI(A)+TP	61.11**	40.17**	67.08**
4.	IS+CMI(A)+TP+IN	55.21**	30.24**	55.34**
5.	IS+CMI(A)+TP+IN+S/S	50.37**	24.68**	46.38**
6.	IS+CMI(A)+TP+IN+S/S+SR	47.63**	20.57**	41.99**
7.	IS+CMI(A)+TP+IN+S/S+SR+AC	41.15**	20.27**	41.14**
8.	IS+CMI(A)+TP+IN+S/S+SR+AC+ER	36.45**	19.95**	32.65**
9.	IS+CMI(A)+TP+IN+S/S+SR+AC+ER+SE	33.68**	17.71**	30.47**

**Significant at .01 level.

Influence of Subscales of Instruments as Group Discrimination

Super's Work Values as Discriminators

In the next discriminant analysis model developed to seek the best combination of attitudinal variables for differentiating among the three groups of subjects, a stepwise discriminant program was plotted in which only the 15 work values assessed by Super's Work Value Inventory were employed as predictors of group differences. A summary table of F ratios for discriminant functions in this model are given in Table 18 in the order which they emerged in the stepwise programs. In this analysis where work values composed the total set of functions, seven of the value subscales were found to discriminate among the three groups. In order of their influence in describing the characterizations of the group they were as follows: (1) intellectual stimulation (F=94.21); (2) independence (F=13.54): (3) achievement (F=11.09): (4) esthetics (F=11.96); (5) supervisory relations (F=6.75): (6) economic returns (F=5.73) and (7) security (F=3.96).

Statistics and equivalent F ratios describing group differences as predicted by the stepwise discriminant equation are given in Table 19 for each step of the analysis.

In these data the work values' scores appear to be inter-relating somewhat differently when they are included with other attitudinal measures in the discriminant function than when they comprise the total set of 20 predictor attitudinal variables. In the smaller model containing only 15 work values, for example, esthetics or the

Table 18

Summary Table Indicating Order of Entry of Separate Work Values in Stepwise Discriminant Analysis

Step No.	Variable Entered	F to Enter	U-Statistic
1.	Intellectual Stimulation	94.21**	.5934
2.	Independence	13.54**	.5401
3.	Achievement	11.09**	.4995
4.	Esthetics	11.96**	.4591
5.	Supervisory Relations	6.75*	.4373
6.	Economic Returns	5.73*	.4195
7.	Security	3.96*	.4075
8.	Way of Life	3.27	.3978
9.	Variety	2.58	.3903
10.	Management	1.68	.3854
11.	Creativity	1.92	.3799
12.	Surroundings	1.30	.3762
13.	Associates	1.01	.3733
14.	Altruism	1.08	.3703
15.	Prestige	.81	.3680

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*Significant at .05 level.
**Significant at .01 level.

Table 19

F Ratios Contrasting Separate Pairs of Groups in Each Step of Discriminant Model When Super's Work Values Were Employed as Predictor Variables

Step No.	Variables in Function	df	DV:DNV	DV:NDV	NDV:DNV
1.	IS	1,276	182.22**	10.84**	77.56**
2.	IS+IN	2,275	110.51**	5.52**	51.60**
3.	IS+IN+AC	3,274	74.77**	11.25**	36.84**
4.	IS+IN+AC+ES	4,273	55.87**	13.98**	32.32**
5.	IS+IN+AC+ES+SR	5,272	49.25**	11.31**	28.11**
6.	IS+IN+AC+ES+SR+ER	6,271	41.53**	11.70**	23.89**
7.	IS+IN+AC+ES+SR+ER+SE	7,270	37.50**	10.03**	21.52**

*Significant at .05 level.
**Significant at .01 level.

value of having work which creates beautiful things, was demonstrated as explaining a significant amount ($p < .01$) of the between group variances in comparing the three groups. In the larger set, however, this variable was not found to be statistically significant as a discriminator. In conjunction with the larger set of variables, also, the achievement work did not appear to be quite so influential as a discriminator as it appeared in the smaller model since it entered the function as the fourth work value in the large model and as the third work value in the smaller model. The main difference demonstrated here appeared to be that in association with the self and school attitudes and the career maturity attitudes, achievement as a work value was found to be more significant than the supervisory relations work value as a discriminator among groups. The reverse, however, was true when the work values were also utilized as predictors of group differences.

Self and School Attitudes as Discriminators

In Table 20 are given the F ratios for the variance contributed by each of the subscales and the total score of the Survey of Pupil Opinion when these measures comprised the total set of discriminant variables. Two of these variables, the self-as-student subscale and the teacher relationships subscale were found to discriminate significantly among the groups with F ratios to enter of 64.94 and 16.32, respectively. Group differences as determined at each phase of the discriminant analysis are given in Table 21. In this model restricted to attitude measures taken from the Survey of Pupil Opinion, alone, the self-as-student subscale apparently was more

Table 20

Summary Table Indicating Variables from the Survey of Pupil Opinion Which Discriminate Significantly Among Groups

Step No.	Variable to Enter	F to Enter	U-Statistic
1.	Self as Student	64.94**	.6792
2.	Teacher Perceptions	16.32**	.6069
3.	Overall Attitude Score	.53	.6046
4.	Social Perceptions	.17	.6038

**Significant at .01 level.

Table 21

Comparing Groups on Set of Discriminant Attitudes Measured by the Survey of Pupil Opinion

Step No.	Variables in Equation	DV:DNV	DV:NDV	NDV:DNV
1.	Self as Student	127.81**	11.20**	46.41**
2.	Teacher Perceptions	69.96**	10.54**	42.03**

**Significant at .01 level.

influential than the teacher perceptions subscale as a discriminator among the groups of high school students. The reverse was true in the larger model where these variables are considered in the same set of variables as the work values and the attitudes measures of the Career Maturity Inventory as discriminators among the disadvantaged vocational, disadvantaged nonvocational and the nondisadvantaged vocational groups.

As noted in Tables 17, 19 and 21, either of the three stepwise discriminant models explored thus far described a function of variables that predicted significant differences among the three groups of subjects at every step of the analysis in each case. Hence, perhaps it could be said that each of the instruments would be sufficient for demonstrating significant differences in the three groups of subjects when its subscales were considered in a multivariate approach.

Predicting Group Memberships with Different Discriminant Models

Discriminant analysis programs, however, offer another set of statistics which may allow more careful analysis of which of the foregoing discriminant equations are most effective for differentiating among groups. A discriminant analysis program (BMD05M) for several groups presented by Dixon (1973) develops a discriminant equation for each group which includes all variables as predictors of group membership as assigned on a priority basis. Means for each individual in the study are compared with those of individuals in his assigned group and with those of individuals in the other respective groups to determine the probability for membership in each of the three groups. The group for which the greatest probability existed for his measurements on the predictor variables to coincide in measurement space is the individual's predicted group. Then, each subject's predicted group membership is tabulated against his a priori established group membership to check for agreement.

Three separate discriminant analyses utilizing the BMD05M program were next calculated to see which of the three models was most effective in placing more subjects into their grouped classifications which had been established on the basis of socioeconomic background and educational needs of students.

Total Model of Career Attitudes, Work Values and Attitudes Toward Self and School

When the computer plotted the discriminant scores for each individual in multidimensional space in relationship to the total set of 20 affective measures, it was discovered that 81.65% of the subjects were correctly assigned to their previously established groups. As indicated in Table 22, seventy of the 92 disadvantaged nonvocational students (76.09%) were found to be more like the members of their own group on this set of discriminant variables composed of career attitudes, work values and attitudes toward self and school. More of the disadvantaged students who studied in the successful vocational programs (over 84%) were properly classified. A similar percentage of nondisadvantaged vocational students (84.50) was found to be more like the members of their own group than like those of the two disadvantaged groups.

Table 22

Classification of Subjects into A Priori Groups Utilizing Three Separate Discriminant Analysis Models

Model	A Priori Group	% Classified in Each Group		
		DNV	DV	NDV
CMI/A+WVI+Self in School				
	DNV	76.09	15.22	8.70
	DV	.87	84.35	14.78
	NDV	.00	15.49	84.50
Work Value Inventory				
	DNV	72.83	15.22	11.96
	DV	3.48	78.26	18.26
	NDV	5.63	52.27	61.97
Self in School				
	DNV	75.00	17.39	7.61
	DV	11.30	64.35	24.35
	NDV	12.68	36.62	50.70

Work Value Inventory Model

In the second discriminant classification analysis, the predictive model was reduced to contain only 15 discriminant factors based on the work values assessed in Super's instrument. Even with the exclusion of the measures of career maturity attitudes on Crites' Career Maturity Inventory and the set of factors from the Survey of Pupil Opinion, the reduced model was successful in placing 72.83% of the disadvantaged nonvocational group, 78.26% of the disadvantaged vocational group and 61.97% of the nondisadvantaged vocational group. These data are also presented in Table 21.

The drop in the number of nondisadvantaged students properly placed in their a prior assigned group may indicate that the attitudes measured on the other instruments describe characteristics which are more discriminant for this group. On the attitude scale of the Career Maturity Inventory, for example, the nondisadvantaged group did score significantly higher than did the other two groups in the analysis of variance comparisons of the means for the three groups (see Table 9).

Survey of Pupil Opinion

When student attitudes toward self and school as measured by the five subscales of the Survey of Pupil Opinion were used as the components in a discriminant analysis function to predict membership in the three groups, 64.35% of the disadvantaged vocational students were properly classified by the equation. In contrast 75% of the disadvantaged nonvocational group were properly classified and 50.7%

of the nondisadvantaged vocational students were correctly classified by their similarity in attitudes. These data are given in Table 22.

Comparative Evaluation of Three Models

When percentage of correct classification of subjects into group membership are utilized as the criterion for testing the effectiveness of the discriminant models studied, it appears that the equation with 20 attitudinal measures does predict better for both the disadvantaged vocational and the nondisadvantaged vocational groups of students. It seemed to matter very little whether 20, 15 or 4 attitudinal measures were used in the predictor set for discriminating the disadvantaged nonvocational group. All three models did not differ more than 3.16% in the number of persons correctly placed in this group by the three discriminant functions. In contrast, the 20 predictor variables increased the percentage of disadvantaged vocational students correctly classified by 20.0% over the 4 predictor variables of school and self attitudes in the smaller set. The total set of 20 predictor variables correctly discriminated among 30.2% more of the nondisadvantaged vocational students than did the small set of four variables. The set of 20 variables also increased the number of disadvantaged vocational students properly grouped by a little over five percent above the number properly classified by the set of four discriminant functions. The work value set of predictors, at the same time, improved the capabilities of the equation to place properly over 11% more of the nondisadvantaged students.

From these data it was inferred that the best predictor set studied for discriminating the disadvantaged vocational group from groups of students with similar educational backgrounds was the total set of 20 attitudinal measures including the 15 work values, four attitudes toward self and school and attitudes as measured by the CMI.

To answer the fourth question, attitudinal measures which differentiated the disadvantaged vocational group in the multivariate set were as follows: more need for intellectual stimulation as a work value, more positive attitudes associated with career maturity, better perceptions of teachers, more expressed work values for independence, more positive attitude toward self as a successful functioning individual in the school environment, more value for good supervisory relationships in work, higher regard for achievement value of work and about equal value for security in a job.

In reference to the nondisadvantaged vocational group fewer differences were apparent. The disadvantaged vocational students in the quality programs, however, appeared to value intellectual stimulation more, held less positive attitudes associated with career maturity as measured by Crites' CMI, expressed more positive teacher relationships, gave a higher rating to their self as an adequate functioning individual in school and had more need for economic returns.

Relating to the fifth research question, the work values of intellectual stimulation, independence, achievement, esthetics, supervisory relations, economic returns and security were the variables which discriminated most effectively among the three groups when the measures of the WVI comprised the total discriminant analysis set.

Also in regard to the fifth question, the factors of self-as-student and teacher perceptions were the only two variables on the Survey of Pupil Opinion to differentiate significantly among the three groups when this instruments' subscales were employed as the criterion measure for the total predictor set.

Relationship of Race, Sex and Age to Discriminant Function

How do the variables of race, sex and age influence the set of attitudes found to discriminate significantly among the three groups of subjects? To answer this sixth major research question, in a final discrimination analysis program, the variables of race, sex and age were added to the predictor set containing the 20 selected attitudinal measures to differentiate among the disadvantaged vocational, disadvantaged nonvocational and the nondisadvantaged vocational groups of students. To order the descriptive variables the stepwise discriminant statistical program was again employed for data analysis. The ordering of significant variables in this expanded discriminant function are given in Table 23. In the new set of predictors, 10 of the traits were found to contribute significantly to the discrimination among groups. Five of the work values, intellectual stimulation ($p< .01$), independence ($p< .01$), supervisory relations ($p <.01$), esthetics ($p< .01$), and achievement ($p< .01$) held by the students differentiated among the three groups. In addition, the attitude scores of the Career Maturity Inventory ($p< .01$), the teacher relation ($p< .05$) and the self-as-student ($p< .05$) attitudes scales of the SURPO explained a significant quantity of differential variance among the groups. Finally, the personal variables of race and sex were found to be significant discriminators

Table 23

Summary of Differentiating Functions of Variables in Stepwise Discriminant Analysis When Sex, Age and Race of Subjects Were Considered[#]

Step No.	Variable Entered	F to Enter	U-Statistic
1.	Intellectual Stimulation	94.25**	.591
2.	Race	84.29**	.364
3.	Career Maturity Attitudes	19.28**	.319
4.	Independence	12.27**	.292
5.	Supervisory Relations	9.20**	.273
6.	Teacher Perceptions	6.02*	.261
7.	Self as Student	9.05*	.245
8.	Sex	6.54*	.233
9.	Esthetics	5.02*	.225
10.	Social Perceptions	3.64	.319
11.	Achievement	3.98*	.212
12.	Security	2.50	.208
13.	Associates	3.04	.203
14.	Creativity	1.73	.201
15.	Management	1.56	.198
16.	Prestige	1.48	.193
17.	Economic Returns	1.11	.191
18.	Variety	1.05	.191

[#] Negative displaying F ratios of < 1.00 were excluded from table.

*Significant at .05 level.

**Significant at .01 level.

at the .01 and .05 levels, respectively.

To understand the interaction of the race x group and sex x group interactions, means for the sex and race subgroups of the disadvantaged vocational, disadvantaged nonvocational and nondisadvantaged vocational students are presented in Tables 24 and 27.

Means for the sex subgroups for all comparison variables are given in Tables 24 and 25. The F ratios presented were those taken from separate analysis of variance models in which the interaction of sex x classification groups were considered in a least squares analysis of variance model developed by Harvey (1968). This model allowed for adjustment of means for uneven subcell sizes.

Among the variables which discriminated among the groups significantly in the stepwise model summarized in Table 23, only two, the work values of independence and esthetics, demonstrated significant sex x group interactions. In the Scheffe test it was found that for the independence work value, the female disadvantaged vocational students' mean was significantly higher than even the males for the other two groups of subjects. And, for the esthetics work value, while the female groups generally scored higher, the males in the disadvantaged vocational group rated themselves significantly higher than did the females from the nondisadvantaged group at the .01 level. In short, the males and females within the disadvantaged vocational group appeared more alike than did either of these sex subgroups to their corresponding sex subgroups in the other two major classification groups.

Table 24

Male and Female Group Means for Disadvantaged Vocational, Disadvantaged Nonvocational and Nondisadvantaged Vocational Groups on Work Values

Work Values	DV		DNV		NDV		F
	Males (N=102)	Females (N=13)	Males (N=61)	Females (N=31)	Males (N=41)	Females (N=30)	(SxG) 3.86*
Creativity	11.88	12.46	6.67	8.97	11.15	11.13	3.86*
Management	11.28	11.31	6.95	6.81	10.63	9.17	1.80
Achievement	12.35	13.15	9.39	10.48	12.81	12.77	1.42
Surroundings	12.49	13.46	10.75	13.77	12.32	12.90	7.28*
Supervisory Rel.	12.34	13.26	11.89	12.00	12.66	12.40	2.38
Way of Life	12.94	13.77	11.32	10.87	13.37	13.50	2.74
Security	13.67	13.02	13.24	13.87	12.00	13.03	1.58
Associates	11.92	12.31	11.23	11.10	9.44	11.47	1.71
Esthetics	11.25	12.15	8.27	12.12	11.66	9.57	11.82**
Prestige	12.25	11.62	9.21	9.52	12.76	11.17	.68
Independence	12.47	12.69	8.31	7.55	11.62	10.27	5.52*
Variety	10.96	11.74	7.57	7.45	10.83	11.76	.36
Economic Returns	11.06	11.77	6.74	6.90	11.32	11.20	2.90
Altruism	9.27	11.13	12.06	13.00	11.61	13.10	.39
Intellectual Stimulation	12.73	12.83	7.52	6.52	11.21	10.31	.01

*Significant at .05 level.
**Significant at .01 level.

Table 25

Male and Female Group Means for Attitudinal Measures
Related to Career Maturity, School and Self

	DNV		DV		NDV		F
Criterion	Male (N=61)	Female (N=31)	Male (N=102)	Female (N=13)	Male (N=41)	Female (N=30)	(SxG)
SURPO							
Self and School	27.71	32.84	43.89	43.46	37.29	43.13	.84
Teacher Perceptions	10.65	11.81	12.78	12.92	10.15	11.77	.65
Social Partic.	34.27	37.39	44.48	44.85	41.29	42.43	.22
Overall School	78.00	88.26	107.97	107.92	94.93	103.00	.63
Career Maturity	19.08	22.00	27.06	23.85	32.61	35.00	2.45

Table 26

Means for Black and White Subgroups on Attitudinal Measures Related to Work Values

Work Values	DNV		DV		NDV		F Ratio (RxG)
	Black (N=70)	White (N=22)	Black (N=102)	White (N=13)	Black (N=12)	White (N=59)	
Creativity	6.76	9.64	12.91	10.69	13.75	10.61	17.39**
Management	6.27	8.96	11.34	10.77	11.33	9.75	10.02**
Achievement	9.32	11.13	12.51	11.92	13.75	12.59	7.47**
Surroundings	11.47	12.73	12.59	12.69	14.17	12.24	5.61**
Supervisory Rel.	11.73	13.55	12.50	12.23	14.16	12.22	5.04*
Way of Life	10.83	12.27	13.06	12.85	14.50	13.20	5.98*
Security	13.32	13.86	13.73	13.39	14.58	12.95	5.09*
Associates	11.28	11.05	12.00	11.69	13.08	11.51	1.78
Esthetics	9.28	10.46	11.41	10.92	11.33	9.12	4.95*
Prestige	9.09	10.05	12.27	11.46	13.08	11.11	5.49*
Independence	7.65	9.36	12.61	11.62	12.92	11.46	8.43**
Variety	6.17	8.82	11.15	11.08	12.75	10.63	8.71**
Economic Returns	13.07	12.50	14.21	12.77	14.50	12.90	1.07
Altruism	9.51	11.14	12.19	12.00	13.42	11.80	5.09*
Intellectual Stimulation	6.04	9.14	12.18	11.00	12.08	10.39	13.06**

*Significant at .05 level.

**Significant at .01 level.

Table 27

Means for Black and White Subgroups on Attitudinal Measures Related to Career Maturity, Self and School

Criterion	DNV		DV		NDV		F Ratio (RxG)
	Black (N=61)	White (N=31)	Black (N=102)	White (N=13)	Black (N=41)	White (N=30)	
SURPO							
Self as Student	27.78	34.73	44.66	37.46	41.83	38.83	8.62**
Teacher Perceptions	10.90	11.46	12.89	12.07	11.42	10.71	.59
Social Perceptions	33.85	40.05	44.52	44.54	40.35	42.09	1.75
Overall School	80.32	92.61	109.12	100.78	99.25	98.90	4.42*
Career Maturity	18.11	26.32	26.50	28.23	32.17	33.92	3.37

*Significant at .05 level.
**Significant at .01 level.

The interactions of race with the attitudinal measures, however, were more complex. Of the 20 attitudinal criteria studied, 15 exhibited race x classification group interactions in the factorial studies utilizing Harvey's least squares model. Five of these variables for which race interactions were demonstrated among groups entered the discriminant function set when the variables of age, sex and race were considered in the predictor model (See Tables 26 and 27.) In most cases these interactions demonstrated significantly higher means for blacks in the disadvantaged vocational group than for whites in either of the other two groups studied. Again, blacks in this group scored more like whites in this group than they scored like blacks in the disadvantaged nonvocational or nondisadvantaged vocational groups.

In the discriminant function, as might be expected from the sex x group interactions in the factorial analysis of variance models, the esthetic's work value became a significant discriminator (.01 level) when the variables of sex, age and race were added to the discriminator set. At the same time economic returns no longer contributed significantly to the differentiation of the groups.

Summarizing, these data appear to indicate that race and sex interacted significantly with the attitudinal measures in discriminating among groups. The changes observed in the discriminator set of variables when sex and race were also considered were the addition of esthetics and the exclusion of economic returns as significant work values in the predictor set. The influence of these variables, however, should be viewed very cautiously because of the uneven distribution of blacks and whites, males and females in the three major groups studied.

Prediction of Student Progress

To predict student progress in vocational education programs from the total set of attitudinal measures and other personal data as implied in the seventh major research question, a stepwise multiple regression program (BMDO2R) developed by Dixon (1973) was computed. As summarized in Table 28, only two variables were significantly related to the teachers' opinions of the students' future work potential based on their present progress in class. These variables were student sex and overall attitudes toward vocational programs. The females appeared to be more generally highly rated than the males. Individual students' attitudes toward the vocational program and the teachers' ratings of that specific student's progress were positively correlated. Both of these two characteristics explained only 10.75% of the variance found in teacher ratings of pupil progress, however.

Data from this analysis indicate that variables other than attitudes associated with career maturity, work values and self and school apparently are needed to predict student progress in the eyes of their instructors more effectively.

Inner-Relationships Among Attitudinal Measures

Question Eight asked how significant were the variables of age, sex, tenure of study in program, work values, attitudes toward self and school, career maturity attitudes, attitudes toward vocational programs and instructors' evaluations of student progress as predictors

Table 28

Summary of Variables Significantly Predicting Instructor's Ratings for Disadvantaged Students' Potential in Future Work

Step No.	Variable Entered	r	R	R^2	F to Enter
1.	Sex	.21	.213	.045	5.36*
2.	Attitude Toward VoEd	.21	.327	.107	7.73**

*Significant at .05 level.
**Significant at .01 level.

of disadvantaged vocational students' career maturity attitudes, self in school attitudes and attitudes toward vocational education programs when the respective dependent variable was held constant.

To answer this question, two separate stepwise multiple regression analyses were conducted utilizing the disadvantaged vocational students score on the Attitudes Scale of the Career Maturity Inventory and the composite score of the Attitudes Toward Vocational Program scale, respectively, as dependent variables. The third analysis involved a canonical correlation utilizing the four scores from the Survey of Pupil Opinion as a composite set of criterion measures.

Career Maturity Attitudes as Criterion

In a stepwise multiple regression model the total attitude score measured for the disadvantaged vocational group on the CMI was related to the following set of variables: age, sex, race, number of years in vocational program, self-as-student attitudes, teacher perceptions, social perceptions, total school attitudes, inventories of the 15 separate work values on Super's instrument, student overall attitudes toward vocational education programs (ATVP) and teachers' projected ratings of student progress toward future work performance as assessed by present progress as student. The results of the stepwise analysis are given in Table 29.

An R^2 of .389 indicated that 38.9% of the variance in the vocational disadvantaged's career maturity attitude scores were significantly predicted by student sex and work values associated with supervisory relations, creativity, variety, altruism and surroundings and with

Table 29

Summary of Variables Significantly Predicting Attitudes Associated with Career Maturity (CMI) for Disadvantaged Vocational Students

Step No.	Variable Entered	R	r	R^2	F to Enter
1.	Supervisory Relations	.073	.27**	.271	8.95**
2.	Creativity	.165	-.23*	.406	12.29**
3.	Teacher Ratings	.218	.16	.467	7.56**
4.	Variety	.276	-.21*	.526	8.82**
5.	Altruism	.325	.24*	.570	7.93**
6.	Surroundings	.368	.29**	.606	7.19**
7.	Sex	.389	.17	.623	3.96*

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*Significant at .05 level.
**Significant at .01 level.

their instructors' evaluation of the students' future work potential in their area of training. Describing this relationship, those who scored higher on Crite's subscale of attitudes also appeared to place more value on supportive supervisory relations, the desire for helping others in work, and working in pleasant and comfortable surroundings. At the same time, these students were less motivated by the creative facets of work and valued variety in a job less. They were also seen by their teachers as having future potential in the area of work for which they were receiving semi-skilled training. The significance associated with sex indicated that females, generally, had higher attitudes on career maturity after the influence of these other variables had been partialed out in the regression.

Attitude Toward Vocational Education as Criteria

In Table 30 it is observed that four variables, the work values of way of life, achievement and independence as well as the teachers' evaluation of student potential were significant predictors of the disadvantaged vocational students' attitudes toward their vocational education program as measured by a set of 25 predictors. A sizeable portion of the disadvantaged group's attitudes toward their vocational classes (44.5%) was associated with these four significant predictors and three other non-statistically significant variables, race, creativity work values and surroundings work values, which also appeared to interact in this analysis. As shown in Table 30, the work values of creativity and surroundings, as well as the race variable, did not contribute to the variation in the students' attitudes toward their vocational education program. However,

Table 30

Summary of Variables Significantly Predicting Attitudes of Disadvantaged Vocational Students Toward Vocational Education Programs

Step No.	Variable Entered	r	R	R^2	F to Enter
1.	Way of Life	.51**	.515	.266	40.87**
2.	Achievement	.46**	.594	.352	14.98**
3.	Teacher Rating	.21*	.618	.382	5.34**
4.	Race	.08	.631	.398	2.93
5.	Creativity	.34**	.643	.414	2.89
6.	Surroundings	.18	.652	.425	2.06
7.	Independence	.29**	.667	.445	3.99*

*Significant at .05 level.
**Significant at .01 level.

after the variance associated with these variables was partitioned from the residualized variance in the stepwise regression model, the value associated with independence in work was shown to be significantly related (.01 level) to the program attitudes of the students.

Self and School Attitudes as Criteria

A composite set of three major factors found in the Survey of Pupil Opinion which represented the students' attitudes toward self and school were next correlated with the set of 22 other personal variables for the disadvantaged vocational students. The canonical correlation model employed in this phase of the study was developed by Veldman (1967). In this analysis, five independent factorial relationships between the two sets of variables were computed and evaluated. This analysis was selected since it allowed an observation of the relationship of the predictors to the total set of criterion variables in simultaneous interaction. (This procedure had been found to be more effective for predicting group variance in relationship to these variables in preliminary studies.)

The canonical R^2's which resulted from this analysis showed the amount of variance which the three factors from the *Survey of Pupil Opinion*, collectively had in common with the predictor set of 22 variables. The three canonical factors derived in this study are presented in Table 31.

Two statistically significant factors were derived. They explained 69.19% and 17.39%,respectively, of the variance in the relationship between the predictor and criterion set of variables. Correlation

Table 31

Canonical Roots Derived in Predicting Attitudes Toward Self and School Measured by SURPO

Roots	I	II	III
R	.8136	.4170	.1183
R^2	.6619	.1739	.0514
Chi Square	287.31	50.61	13.97
Df	24.	22.	20.
p	.0000	.0008	.8308

coefficients for the 22 predictor measures and the three self and school attitude scales with the two significant canonical roots are given in Tables 32 and 33.

These data support the supposition that the disadvantaged vocational students' attitudes toward self and school were closely related to their work values, school experiences and other personal variables. It can be noted in Table 31 that the major canonical root extracted related to all three of the factors from the Survey of Pupil Opinion. Factor I was not related extensively to either race or sex differences. It, however, was influenced by the age of students. Generally, more positive attitudes toward self and school appeared to be associated with older students who had been in the program longer. These students who had more positive attitudes toward self and school also had more positive attitudes toward their vocational education program and displayed attitudes more closely associated with career maturity. For work values, those who had better attitudes toward themselves in school rated highest in the following areas: creativity, management, achievement, surroundings, supervisory relations, way of life, esthetics, prestige, independence, variety, altruism and intellectual stimulation. This factor also described students who were rated as having higher future potential for work in their area of preparation by their teachers.

Factor II (Canonical Root 2) in this analysis, explaining 17.39% of the common variance was associated mostly with a teacher perception, race and esthetic work value interaction. It appeared that black disadvantaged students (Blacks scored 0: Whites scored 1) who claimed

Table 32

Correlation of Predictor Variables with Canonical Roots Composed of Attitudes Toward Self and School

Predictor Variables	Significant Roots	
	I	II
Age	(.390)	.069
Sex	.018	.162
Race	.016	(-.638)
Years in Program	(.564)	-.175
Attitude toward VocEd	(.573)	.248
Career Maturity Attitudes	(.627)	.277
Creativity	(.808)	-.136
Management	(.760)	-.220
Achievement	(.808)	-.255
Surroundings	(.394)	-.066
Supervisory Relations	(.374)	.115
Way of Life	(.605)	-.113
Security	.139	.008
Associates	.091	.011
Esthetics	(.444)	(.348)
Prestige	(.618)	.002
Independence	(.687)	-.295
Variety	(.787)	-.220
Economic Returns	.249	-.022
Altruism	(.749)	.072
Intellectual Stimulation	(.880)	.000
Instructor Progress Ratings	(.541)	.267

*Correlations > .30 identified variables utilized in root descriptions.

Table 33

Correlation of SURPO Subscales with Canonical Roots Related to Predictor Set

	Criterion Variables	Significant Roots I	II
I:	Self-as-Student	(.987)	.111
II:	Teacher Perceptions	(.575)	(.715)
III:	Social Perceptions	(.868)	-.180

higher esthetic work values also had more positive perceptions of their teachers' role in school.

Summary of Inter-Relationships

In summary for answering the seventh question on attitudes, the career maturity of disadvantaged vocational students was predicted by supervisory relations, creativity, variety, altruism and surroundings as work values. The variables of student sex and instructor ratings of student progress were also significant predictors of career maturity attitudes as measured by Crites' instrument. Disadvantaged students' attitudes toward their vocational education programs were significantly predicted by the work values of way of life, achievement, creativity, surroundings and independence. The personal variables of race and instructor rating of student progress were also significantly related to the attitudes which the students had toward the model vocational programs. Finally, in two independent dimensions of behavioral relationships, all but four of the variables considered (sex, and the work values of security, associates and economic returns) were related to the students' attitudes toward self in school.

Characteristic Profile of Disadvantaged Vocational Students

Since each of the criteria employed for assessing student vocational growth appeared to yield no common patterns which were definitive for describing the attitudinal status of the disadvantaged vocational student, it was decided to combine all of the attitudinal measures for these students in a factor analysis. Hopefully, this analysis would reduce the total matrix of variables to its principal components and allow a more parsimonous and, yet more definitive, description of patterns for work related attitudes held by the students attending the model programs in vocational education. Data derived from this analysis was utilized in answering the ninth research question.

Identification of Component Factors

A factor analysis described by Veldman (1967) which employed a G image matrix to reduce the 25 attitudinal measures of the disadvantaged students to their principal component parts was next computed. This analysis yielded three independent factors which described nearly 86% of the variance found among the total matrix of attitudinal measures. Factor loadings for these three constructs are given in Table 34. According to Veldman, the G image factorial program first determines the amount of variance which each variable has in common with all other variables (R^2) and then inserts this value in the diagonal of the correlation matrix for the factor analysis. In this analysis, a varimax rotation was also done for each factor exhibiting an eigenvalue of over 1.00. The correlations given in Table 34 are those found in the rotated sequence when each of the separate component variables were related to the resulting independent factors. These correlations were then used to describe the characteristics of the component factors. Coefficients of under .30 were suppressed in the data reported.

Factor I which incorporated 64.34% of the total variance among variables described eight characteristics. Four of these were

Table 34

Factors Derived from Combined Attitude Scores Measured By the SURPO, CMI, WVI, TRSP, ATVP Instruments for Disadvantaged Vocational Students (Coefficients < .30 were supressed)

Affective Responses	Instrument	Factor Loadings I	II	III
Career Maturity Attitudes	CMI	.613		
Attitudes toward VoEd	AVEQ			.805
Self-as-Student	SURPO	.719		
Teacher Perceptions	SURPO	.589		
Social Perceptions	SURPO	.850		
Overall School Attitude	SURPO	.815		
Achievement	WVI	.310		
Surroundings	WVI		.370	
Supervisory Relations	WVI		.471	
Way of Life	WVI		.364	
Security	WVI		.610	
Associates	WVI		.545	
Esthetics	WVI		.304	
Prestige	WVI		.461	
Economic Returns	WVI		.520	
Altruism	WVI	.330		
Intellectual Stimulation	WVI	.326		
Teacher Ratings	TRSP			.819
Percentage of Trace		64.34	12.00	7.74

associated with the attitudes assessed by the Survey of Pupil Opinion. The other four components were the attitudes' scale of the CMI and the work values of achievement, altruism and intellectual stimulation. All of the traits in this factor appeared to support the supposition that the disadvantaged vocational students possessed a dimension of characteristics similar to these described by Crites as associated with growth toward vocational maturity. They also seemed to describe an "internal" or non-materialistic set of work motivators (achievement, altruism, intellectual stimulation) present in students who had better feelings about themselves, their teachers and their social perceptions in school.

Factor II, encompassing only 12.0% of the total variance in the attitudinal matrix was associated with eight work values that appeared to be more extrinsically oriented. This factor was most highly correlated with the work value of associates and economic returns. This factor also described a dimension of behavior characterized by future work valued for surroundings, way of life, prestige, supervisory relations and esthetics. This factor appears to encompass all of the work values discovered by Super to be associated with materialistic motivations and most all of the variables associated with Super's "goodness of life" factor (excepting only altruism and achievement). Generally, this factor appeared to describe the motivation for a "good job" with characteristics desired by most people.

The third factor loaded only on students' attitudes toward vocational education and the teachers' ratings of student progress.

These two variables apparently had very little relationship to the work values and other attitudinal measures in this analysis. This factor incorporated 7.74% of the variance found among variables in the factor analysis.

Overall Profiles for Disadvantaged Students in Model Programs

In utilizing the 18 attitudinal variables demonstrated by the factor analysis to contribute to the common characteristics of the group, more positive attitudes toward self-as-student, toward teachers, toward social relations in school and toward the school experience as a whole seem to be characteristic of the disadvantaged vocational students who attended model vocational programs. These students scored significantly higher on all of these traits than did their nonvocational counterparts in the univariate studies. They also scored higher than the nondisadvantaged group on all of these traits except for social relations in school. The disadvantaged vocational group also scored significantly higher on career maturity attitudes than did the disadvantaged nonvocational group. On the other hand, they also scored significantly lower than the nondisadvantaged nonvocational group on this trait. The disadvantaged vocational group's mean of 26.56 still ranked in the 8-10 percentile range for tenth grade on national norms as cited by Crites (1973). In comparison, however, the disadvantaged nonvocational group ranked in the second percentile on national norms for tenth grade. More favorably, however, the nondisadvantaged vocational group ranked in the 35-42 percentile on national norms for attitudes associated with career maturity. In spite of these relatively weak showings on career maturity attitudes, the disadvantaged vocational group also exhibited work value preferences related to intellectual stimulation and achievement in future work. They also preferred work which allowed them to help others. The disadvantaged vocational group significantly outvalued both of the other groups on the intellectual stimulation dimension and also valued altruism and achievement significantly more than did the disadvantaged nonvocational group.

In terms of the eight work values which composed Factor II of the total set of attitudinal variables for the disadvantaged vocational students, these students from exemplary vocational programs did not differ significantly from either of the two comparison groups on four traits: surroundings, supervisory relations, security and associates. They rated both esthetics (the desire to create beautiful things) and economic returns (good financial return for work) as significantly higher in work values than did either of the two reference groups. Prestige and way of life were more attractive work values for these students than they were for disadvantaged nonvocational students.

Because of incomplete data the three groups could not be compared on the dimension of behaviors in Factor III depicting a relationship between the attitudes of students toward vocational programs and the instructor ratings of these students' progress. As already indicated, however, a positive relationship (.01 level) existed between these two variables for the vocationally disadvantaged group.

In brief, then, in answer to the final research question, the attitudes of the vocationally disadvantaged toward self and school were positive. Work values significantly characteristic of the group as compared to the disadvantaged nonvocational group were intellectual stimulation, altruism, economic returns, prestige, esthetics, way of life and achievement. In comparison to regular vocational students, the disadvantaged vocational students expressed more positive attitudes toward vocational education. These more positive attitudes were associated with higher ratings from instructors on student progress. The disadvantaged vocational group had made more positive growth on attitudes associated by Crites with career maturity than had the disadvantaged nonvocational group, but its mean ranking was on career maturity attitudes was in the lower quartile on national norms.

V. SUMMARY, IMPLICATIONS, RECOMMENDATIONS

The major objective of this research was to determine whether participation in quality vocational programs for training rural disadvantaged adolescents was influential in developing among these students attitudes that are associated with vocational readiness. A group of disadvantaged students who were not enrolled in vocational education courses but were considered likely candidates for special needs programs was employed for comparative purposes. A second comparison group consisted of nondisadvantaged students enrolled in regular vocational education courses. These students came from schools in four separate geographical regions in rural Mississippi.

Twenty attitudinal variables including 15 work values assessed by Super's _Work Value Inventory_, the Attitude Scale of Crites' _Career Maturity Inventory_, four attitude scores from Kilbane's _Survey of Pupil Opinion_, including perceptions of self-as-student, teachers, social perceptions and overall school attitudes were measured for the 278 subjects in the three groups. In addition, the overall attitudes of the disadvantaged group toward vocational education and instructors' ratings of their progress in vocational classes were also collected.

Nine research questions probing inter-group relationships and within group relationships for attitudes held by students in the quality programs were utilized to structure the study. Data were analyzed by use of a variety of univariate and multivariate statistical models.

Summary of Findings

Analysis of data appear to warrant the following findings:

1. The disadvantaged vocational students as a group expressed positive attitudes toward their studies in quality vocational programs. More of the group liked their vocational training more than other school work, felt they were learning worthwhile skills, planned to finish their program of studies, would recommend that their friends take vocational education programs and were pleased they had enrolled in vocational education instead of other areas.
2. The disadvantaged vocational group viewed their vocational education studies significantly more favorably than did a norm group of nondisadvantaged vocational students.
3. Disadvantaged students from the quality vocational programs differed significantly from the disadvantaged nonvocational group on 15 of the 20 attitudinal variables studied for both groups. The two groups differed on work values associated with self expression (intellectual stimulation, creativity, variety) and behavior control (management, prestige, independence). The disadvantaged groups also differed significantly on career maturity attitudes and the four school associated attitude measures, self-as-student, teacher, social perceptions and overall school attitudes.

The disadvantaged vocational and the nondisadvantaged vocational groups differed significantly on nine attitudinal scales. They were four work values--intellectual stimulation, economic returns, esthetics and management, perceptions related to self as student, teacher and overall school attitudes, and attitudes associated with career maturity.

4. Nine attitudinal variables contributed significantly to a discriminant function which differentiated among the groups at the .01 level of significance. In order of differentiation influence, these variables were: intellectual stimulation, career maturity attitudes, teacher perceptions, independence, perceptions of self-as-student, supervisory relations, achievement, economic returns and security. In comparison to the disadvantaged nonvocational group, the students in the quality vocational program for disadvantaged had more positive perceptions of themselves as students and viewed teachers more favorably. They were attracted by five work values: intellectual stimulation, independence, supervisory relations, achievement and security. They exhibited more positive attitudes in career maturity. In reference to the nondisadvantaged subjects, the disadvantaged vocational students held less positive attitudes toward career maturity, gave better perceptions of self in school and of teachers and expressed more need for work values associated with economic returns and intellectual stimulation.

5. When the 15 work values were considered as the predictor set for differentiating among groups,seven of the variables discriminated significantly among the three groups of subjects.

They were intellectual stimulation, independence, achievement, esthetics, supervisory relations, economic returns and security. When the predictor set was composed,only of the four variables measured by the Survey of Pupil Opinion only two variables contributed significantly to the differentiation among the three groups. These variables were self-as-student and teacher perceptions.

6. Variables of sex and race did interact significantly with the attitudinal measures in the discrimination function when differentiating among the disadvantaged vocational,disadvantaged nonvocational and nondisadvantaged vocational groups. Because of uneven sample sizes, however, may have been attributed to sample bias instead of rural group differences in association with sex and race.
7. In a predictor set of 25 variables in a multiple regression model only two variables, student sex (females preferred) and attitudes toward vocational education program, were significantly related to instructors' ratings of students' progress in the quality vocational programs for disadvantaged.
8. In a regression model, the work values of supervisory relations, creativity, variety, altruism and surroundings were significant predictors of career maturity attitudes measured by the CMI. Teacher ratings of student progress and student sex (females loaded more heavily) was also significantly related to career maturity.

Attitudes toward vocational education held by disadvantaged students from the model programs were significantly predicted by three work values--way of life, achievement and independence. Teacher ratings of student progress was also a significant predictor variable.

In canonical relationships between the criterion set of three attitudinal measures toward self in school and the predictor set of 22 other variables two significant canonical relationships were observed. The six predictor variables relating most positively with the composite set of school related attitudes (r's >.70) were intellectual stimulation, creativity, achievement, variety, altruism and management work values.

9. When the 25 attitudinal measures taken for the disadvantaged vocational group of students were reduced to basic components in factor analysis, three factors with eigenvalues of over 1.00 were discovered. Generally, these factors isolated dimensions of behavior characterized as follows:

   Factor I: school related attitudes which loaded heavily with career maturity attitudes and projected work values associated with self extression (64.34% of variance).

   Factor II: work values showing materialistic and goodness of life motivations in future jobs (12.0% of variance).

   Factor III: teacher ratings of student progress and student attitudes toward vocational education (7.74% of variance).

Implications of Study

Successful Intervention in Attitudinal Development

These data appear to support the hypothesis that well executed programs of vocational education are influential in fostering school and work-related attitudes in disadvantaged youth which are associated with more career readiness.

When this study was planned it was conceptualized that, if successful intervention did take place in the vocational development of disadvantaged rural youth, students from quality programs of vocational education would exhibit a profile of attitudes more like those of regular vocational students and less like those of disadvantaged youth in nonvocational studies. This construct was well supported since the two disadvantaged groups differed on 15 of 20 attitudinal traits considered while the disadvantaged vocational group differed from the nondisadvantaged group of vocational students only on nine of these traits. Furthermore, on seven of these traits--perceptions of self-as-student, perceptions of teachers, overall self in school attitudes and the work values of intellectual stimulation, management and esthetics--disadvantaged vocational students appeared more self-actualizing oriented in their vocational development than did the regular vocational students from nondisadvantaged backgrounds. Only on the attitude scale of Crites' Career Maturity Inventory did the disadvantaged group exhibit significantly lower growth in vocational development than the nondisadvantaged students in vocational programs.

It appears noteworthy, also, that the disadvantaged students in quality programs expressed more positive attitudes toward their vocational studies than had been observed for regular vocational students in normative studies of the Attitudes Toward Vocational Programs scale.

In comparison to their counterparts from similar disadvantaged backgrounds who were in regular school programs and achieving only at a marginal level, the disadvantaged youth participating in quality vocational training experiences exhibited more positive perceptions of themselves in relation to the school setting. They saw themselves as having more likelihood for achievement in school settings, perceived teachers more favorably and saw school-social perceptions involving parents, teachers and themselves as more constructive than did the comparison group of disadvantaged youth. These youth also projected work values associated with the intrinsic rewards of employment, such as achievement, altruism, intellectual stimulation and independence. This observation is not to infer that the work values of intellectual stimulation and achievement have the same meaning for these students from educationally deprived backgrounds as they might for more advantaged youth. Nevertheless, as projected by Weisman (1973) these aspired work values appear more characteristic of individuals with higher socioeconomic status than would be expected of these disadvantaged youth without program intervention.

Since this study was quasi-experimental in nature and baseline data for assessing the attitudes and work values of the disadvantaged subjects when they entered their vocational studies were not available, no causal relationships were established. Rather only descriptive support for the ameliorating influence of the quality educational programs on the vocational development of disadvantaged youth was observed. Also, no inference was made that all rural disadvantaged youth enrolled in vocational programs in Mississippi would exhibit similar growth toward vocational readiness as did those from the quality training programs. It was clear, however, that educationally disadvantaged students from the four select programs of vocational education sampled in this study did project a significantly more positive profile of school and work-related attitudes than did their counterparts who were not pursuing studies in vocational education.

Correlates of Career Maturity Attitudes

In this study disadvantaged youth from both regular high school programs and quality vocational programs were found to rate significantly lower on the Attitudes Scale of Crites' *Career Maturity Inventory* than did nondisadvantaged students from regular vocational programs. This finding for rural disadvantaged did not support observations by Cover(1968), Gilliland (1966), and Ashbury (1967) that nonsignificant correlations existed between the socioeconomic level of youth and career maturity attitudes.

Seven variables were found in this study to be predictive of career maturity attitudes for disadvantaged subjects enrolled in quality vocational education programs. Five of these significant predictors were work values measured by Super's WVI--supervisory relations, creativity, variety, altruism and surroundings. The other two predictors were student sex (females scored higher) and higher instructors' rating of student progress in vocational programs.

These variables predicted nearly 39% of the variance in career maturity attitudes for disadvantaged. Two of the work values, creativity and variety were negatively correlated (-.23 and .21, respectively) with career maturity attitudes.

In factorial studies combining 22 attitudinal measures, the career maturity attitude score loaded heavily on a factor with attitudes toward self as student, teacher perceptions, school-social relations, overall school attitudes and intrinsic work values such as altruism, achievement, independence and intellectual stimulation for disadvantaged youth.

Correlates of Self Perceptions in School Setting

The three dimensions of self as related to the school setting factored from Kilbane's Survey of Pupil Opinion for the disadvantaged vocational youth correlated significantly with a set of 22 attitudinal and personal variables in a canonical relationship. Six work values--intellectual stimulation, creativity, achievement, variety, altruism, and management--each indicated individual correlations of over .70 with the canonical root which combined the self-as-student, teacher and social perceptions in a composite score. According to Super (1970) these work values describe motivational patterns associated primarily with self expression, behavior control and goodness of life. It was interesting to note that the set of self in school attitudes, though correlating positively with materialistic work values, did not load heavily in the same factors as these variables. With the exception of the value for higher economic returns which significantly discriminated the disadvantaged vocational students from the two comparison groups, better self adjustment in school apparently was associated with the need for less materialistic gains.

The disadvantaged students from the quality high school programs in vocational education, in brief, appeared mature enough in work values and attitudes toward self and their studies to profit from more specific job training in post secondary level studies. With further supportive assistance in their academic work in basic subject areas, they should grow toward successful vocational adjustment in the future.

Recommendations

Recommendations are offered in terms of future program development and need for further study.

Program Development

Since special needs programs in Mississippi in their best operating conditions have been demonstrated to be associated with the development of more positive attitudes in disadvantaged students toward self and school and, apparently, toward more career maturity, it is recommended that these programs be expanded to reach more youth. It is also recommended that these new programs, as well as existing ones, give special consideration for the inclusion of more educational experiences which more actively involve educationally disadvantaged students in career choice processes, allow them to explore their orientation toward work values, reinforce independence in decision making, explore preference for career choice factors and develop more clear concept of career choice processes. More careful integration of career education concepts into the vocational training programs appears essential if career maturity attitudes of these students as defined by Crites are to be improved in terms of national norms.

Further Study

Strong consideration should be given to structuring studies to investigate the sequential aspects of career maturity development in rural disadvantaged youth. These studies should be longitudinal in nature and perhaps should involve critical incidents research design models. These studies should relate students' development in socialization skills, self reliance, self actualization and career maturity to sequential aspects of the vocational-technical curriculum elements. The influence of vocational curricula on the parallel developments of career maturity and self actualization in disadvantaged adolescents could then be assessed with more careful control.

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APPENDICES

Division of Research and Development
Cleveland Public Schools

Appendix A

SURVEY OF PUPIL OPINION

Here are some statements about school. Read each statement carefully and then mark the space on your answer sheet that shows how you feel about the statement. **There are no wrong answers.** Your true opinion whatever it is, is the right answer.

Mark only one answer for each statement. Do not skip any questions. Be sure that the number on the answer sheet matches the question number when you mark your answer. There is no limit. You will be given as much time as you need to answer all the questions. When you finish one page, go on to the next page.

There are five answer spaces for each question. The answer spaces are lettered from A to E like this: A B C D E.

Use this key to mark your answers:

A-Always   B-Most of the time   C-Sometimes,   D-Hardly Ever   E-Never

Circle the letter which best describes how you feel.

1. Chances are good that I'll succeed in school. A B C D E
2. I like to read. A B C D E
3. Teachers are fair. A B C D E
4. School is a waste of time. A B C D E
5. My parents look at my report card. A B C D E
6. I think school is fun. A B C D E
7. The school rules make sense. A B C D E
8. I have a good time in school. A B C D E
9. Students in this school are friendly. A B C D E
10. I watch the clock during class. A B C D E
11. I think I'm doing better in school this year than I did last year. A B C D E
12. I do my assignments on time. A B C D E

Use this key to mark your answers:

A-Always
B-Most of the time
C-Sometimes
D-Hardly Ever
E-Never

13. Teachers expect too much of students. A B C D E
14. I ask my teachers for help. A B C D E
15. My teachers understand me. A B C D E
16. School is boring. A B C D E
17. I take my schoolwork seriously. A B C D E
18. Teachers give me the help I need in school. A B C D E
19. My teachers play favorites. A B C D E
20. I like my teachers. A B C D E
21. My teachers pick on me. A B C D E
22. My teachers can take a joke. A B C D E
23. I look forward to my classes. A B C D E
24. Teachers are too strict. A B C D E
25. My parents like my school. A B C D E
26. I get along well with my teachers. A B C D E
27. I wish I could quit school. A B C D E
28. I come to school on time. A B C D E
29. I get along well with other students. A B C D E
30. Teachers are friendly. A B C D E

Appendix B

____
Student Number

Attitudes Toward Vocational Class

To the Student: The following questions are planned to find out how you feel about your training program in Vocational Education. Answer the questions by drawing a line under the response which best describes how you feel about your work.

1. Do you like your vocational education training better than your other school work?

   Yes Undecided No

2. Do you think that you are learning some skills and information that will help you to get and keep a job in the future?

   Yes Undecided No

3. Do you plan to finish up your course of study and graduate from high school?

   Yes Undecided No

4. Would you recommend that one of your friends take the same vocational training program in high school in which you are enrolled?

   Yes Undecided No

5. Are you pleased that you took the program of vocational study instead of other school work while in high school?

   Yes Undecided No

Appendix C

Instructor Rating of Student Progress

To the Instructor: Please rate the progress of your students in vocational training according to the following five point scale. Mark the line preceding the category which best describes the student's overall progress in your class at this time with an "X".

______________________ 5. Student is making outstanding progress. At the end of high school he will be capable of performing on a job in his area of preparation with little or no supervision.

______________________ 4. Student is making good progress. He should be able to perform well in his area of preparation with moderate supervision on the job.

______________________ 3. Student is making about average progress in classroom performance. He will be able to perform satisfactorily on the job if given regular supervision.

______________________ 2. Student is making slow progress in the program; When he goes on the job, he will require active support and guidance in order to perform adequately.

______________________ 1. Student is making little or no progress in his training program. Unless he does better in the future, he will not be able to maintain a job in his area of study.

____
Instructor's Name

____
Name of Student

____
Name of Program

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